Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: University of Anbar

Faculty/Institute: Faculty of Agriculture

Scientific Department: Department of Soil Sciences and Water Resources

Academic or Professional Program Name: Agricultural concept

Final Certificate Name: Bachelor's degree of Agriculture

Academic System: Course

Description Preparation Date: 25-1-2024

File Completion Date: 14-4-2024

Signature:

Head of Department Name:
Waqas Mahmood Abdel latif

Date:14-4-2024

Signature:

Scientific Associate Name:
Osama Hussein Mahedi

Date:14-4-2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Ass. Prof. Dr. Waleed Ismaal Kurdi

Date: 14-4-2024

Signature:

Approval of the Dean

Prof.Dr.
Idham Ali Abed Khalaf
Deanof the College of Agriculture

1. Program Vision

- Providing students with knowledge of the nature and function of agricultural methods from an academic and occupationally perspective
- Understanding the nature of agricultural work based on international, American and local statistical standards
- Learn the types of agriculture based on the specialty of the entity implementing the work
- Providing them with information regarding programs and files related to agricultural methods
- Developing their awareness regarding agriculture, its importance, types and stages of examination.
- Knowing the nature of Central Inspection Agency work and how to cooperate with them by obtaining accurate statistics

2. Program Mission

- Understand the nature of the work of agricultural concepts
- Distinguishing between types of agriculture and processing methods
- Distinguishing between three terms (land, marketing, and ultimate beneficiary)
- Knowing the types of population statistics that the statistical supervisor uses
- Focusing on the statistical report is used by the agricultural engineer, depending on the nature of the task assigned to him.
- Identifying the nature of the work and jurisdiction of private and public statistical agencies.

3. Program Objectives

Know how to design good programs Know how to prepare results report Knowing how to test the population survey system through its implementation stages

4. **Program Accreditation**
Studying plan for forth stage

5. **Other external influences**
Relevant laws and guidelines

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**5**	**9**	**7%**	**fundamental**
College Requirements	**4**	**11**	**8.6%**	**fundamental**
Department Requirements	**36**	**108**	**84%**	**fundamental**
Summer Training	**1**			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
2024 / First	ASW100	Engineering Drawing	**theoretical**	**practical**
2024 / First	ASW101	Analytical Chemistry		
2024 / First	ASW109	Plane Geometry		
2024 / First	ASW110	Principles of Geology		

2024 / First	ASW111	General Physics		
2024 / First	ASW113	Principles of Animal Production		
2024 / First	ASW104	Mathematics		
2024 / First	ASW103	Principles of Field Crops		
2024 / First	ASW106	English Language-1		
2024 / First	ASW116	English Language-2		
2024 / First	ASW115	Arabic Language		
2024 / First	ASW107	Human Rights and Public Liberties		
2024 / First	ASW105	Computer Applications 1		
2024 / First	ASW114	Computer Applications 2		
2024 / Second	ASW203	Principles of Micro-Biology		
2024 / Second	ASW206	Freedom and Democracy		
2024 / Second	ASW201	General Soil Principles		
2024 / Second	ASW202	Principles of Statistics		
2024 / Second	ASW205	Agricultural Guidance Principles		
2024 / Second	ASW208	Principles of Plant Protection		
2024 / Second	ASW200	Organic Chemistry		
2024 / Second	ASW204	Soil Environment and Meteorological		
2024 / Second	ASW207	Soil, Water, and Plant Analysis		
2024 / Second	ASW209	Agricultural Machinery and Equipment		
2024 / Second	ASW210	Plant Physiology		
2024 / Second	ASW211	Land Leveling and Grading		
2024 / Third	ASW300	Soil Physics		
2024 / Third	ASW301	Soil Organic Matter		
2024 / Third	ASW302	Soil Fertility		
2024 / Third	ASW303	Irrigation		
2024 / Third	ASW304	Soil Chemistry		
2024 / Third	ASW305	Soil and Water Pollution		
2024 / Third	ASW306	Experimental Design and Analysis		
2024 / Third	ASW307	Remote Sensing		
2024 / Third	ASW308	Soil Salinity		

2024 / Third	ASW309	Soil Morphology		
2024 / Third	ASW310	Soil Erosion		
2024 / Third	ASW311	Soil Minerals		
2024 / Third	ASW312	Economics of Natural Resources		
2024 / Fourth	ASW400	Soil Survey and Classification		
2024 / Fourth	ASW401	Soil and Water Conservation		
2024 / Fourth	ASW402	Microbial Soil		
2024 / Fourth	ASW403	Soil-Water-Plant Relationship		
2024 / Fourth	ASW404	Hydrology and Water Resources		
2024 / Fourth	ASW406	Irrigation Systems Techniques		
2024 / Fourth	ASW405	Graduation Research Project 1		
2024 / Fourth	ASW407	Soil Management		
2024 / Fourth	ASW408	Desertification		
2024 / Fourth	ASW409	Plant Nutrition		
2024 / Fourth	ASW410	Fertilizer Techniques		
2024 / Fourth	ASW411	Land Reclamation		
2024 / Fourth	ASW412	Seminars		
2024 / Fourth	ASW413	Graduation Research Project 2		

8. Expected learning outcomes of the program

Knowledge	
Understand the nature of the work of agricultural vocabulary Distinguishing between types of agriculture and processing methods	
Skills	
Know how to design good programs Know how to prepare results report Knowing how to test the population survey system through its implementation stages	
Ethics	
– inculcate values and principles in the student	

by emphasizing the independency when expressing his impartial opinion – Emphasizing personal traits such as integrity, honesty, confidentiality, and ethics. – Explaining the importance of the rules of occupational conduct and exposure to legal penalties if violated – Emphasizing the importance of combating financial and administrative corruption by regulatory bodies.	

9. Teaching and Learning Strategies

- Adopting the method of delivering lectures and linking each topic with examples from the reality of agricultural work

- Giving them some simple practical exercises that are discussed by the students and solved during the lecture

- With the participation of all students in the section with the lecturer to give the material as a form of interaction.

- Training students in laboratories by conducting the necessary laboratory tests for diagnosis

- Summer training in agricultural and veterinary institutions

10. Evaluation methods

Students contribute in the lecture based on their prior preparation for the subject. Giving them an exercise as a homework assignment and asking them to solve it on separate papers, which will collect in the next lecture.

Giving students a case study and dividing them into groups to write a report about that study.

Evaluation through monthly examinations.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Soil sciences and water resources	Microbiology			3	
Professor		Soil fertility			3	
Professor		Soil physics			3	
Professor		Soil survey and classification			3	
Asst. Professor		Soil chemical			3	
Asst. Professor		Soil fertility			1	
Asst. Professor		Soil physics			2	
Asst. Professor		Soil survey and classification			1	
Instructor		Soil chemical			1	
Instructor		Soil physics			1	

Instructor		Soil fertility			1	
Asst. instructor		Soil survey and classification			1	
Asst. instructor					1	

Professional Development
Mentoring new faculty members
Involving the new staff in teaching with the old professors in order to gain experience, skills, and a method of dealing with students
Professional development of faculty members
Encouraging students to achieve the highest marks in the stages of study in the college so that they can be the first in order to achieve their future dreams of completing their studies in postgraduate studies and encouraging them to enroll in postgraduate studies.

12. Acceptance Criterion

The student's average in the preparatory stage, taking into account the student's desire

13. The most important sources of information about the program

Methodological books and scientific (books, journals, periodicals and websites) specialized in the field of soil and water

14. Program Development Plan

Continuous improvement of the program through evaluation and assessment results, etc., in which the observations are used to formulate changes in order to achieve the highest grades in achieving the program's educational objectives and student outcomes.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First stage	ASW100	Engineering Drawing	Basic	●	●	●	●	●	●	●	●	●	●	●	●
	ASW101	Analytical Chemistry	Basic	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW109	Plane Geometry	Basic	●	●	●	●	●	●	●	●	●	●	●	●
	ASW110	Principles of Geology	Basic	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW111	General Physics	Basic	●	●	●	●	●	●	●	●	●	●	●	●
	ASW113	Principles of Animal Production	Basic	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW104	Mathematics	Basic	●	●	●	●	●	●	●	●	●	●	●	●

	ASW103	Principles of Field Crops	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW106	English Language-1	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW116	English Language-2	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW115	Arabic Language	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW107	Human Rights and Public Liberties	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW105	Computer Applications 1	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
First stage	ASW114	Computer Applications 2	Optional	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW203	Microscopic Biology	Optional	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW206	Freedom and Democracy	Optional	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW201	General Soil Principles	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●

Second stage	ASW202	Principles of Statistics	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW205	Agricultural Extension Principles	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW208	Plant Protection Principles	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW200	Organic Chemistry	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW204	Soil Environment and Meteorological	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW207	Soil, Water, and Plant Analysis	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW209	Agricultural Machinery and Equipment	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW210	Plant Physiology	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Second stage	ASW211	Land Leveling and Reclamation	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●

Third stage	ASW300	Soil Physics	Basic	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW301	Soil Organic Matter	Basic	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW302	Soil Fertility	Basic	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW303	Irrigation	Basic	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW304	Soil Chemistry	Basic	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW305	Soil and Water Pollution	Optional	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW306	Experimental Design and Analysis	Optional	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW307	Remote Sensing	Optional	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW308	Soil Salinity	Optional	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW309	Soil Morphology	Optional	●	●	●	●	●	●	●	●	●	●	●	●

Third stage	ASW310	Soil Erosion	Optional	●	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW311	Soil Minerals	Optional	●	●	●	●	●	●	●	●	●	●	●	●	●
Third stage	ASW312	Economics of Natural Resources	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW400	Soil Survey and Classification	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW401	Soil and Water Conservation	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW402	Microbial Soil Biology	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW403	Soil-Water-Plant Relationship	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW404	Hydrology and Water Resources	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth stage	ASW406	Irrigation Systems Techniques	Basic	●	●	●	●	●	●	●	●	●	●	●	●	●

Fourth stage	ASW405	Graduation Research Project 1	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW407	Soil Management	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW408	Desertification	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW409	Plant Nutrition	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW410	Fertilizer Techniques	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW411	Land Reclamation	Basic	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW412	Seminar	Optional	●	●	●	●	●	●	●	●	●	●	●	●	
Fourth stage	ASW413	Graduation Research Project 2	Optional	●	●	●	●	●	●	●	●	●	●	●	●	

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:

Soil principles

2. Course Code:

ASW201

3. Semester / Year:

Semester 2023_ 2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

60 hours / 3.5 units

7. Course administrator's name (mention all, if more than one name)

Name: Huthafia jaseem mohammd
Email: ag.huthafia.Jaseem@uoanbar.edu.iq

8. Course Objectives

1. Identify the soil, which is the upper part of the eart crust. **2. Understanding the mechanism of soil formation a development.** **3.** **Identify the physical, chemical, fertility and biologi characteristics of soil for each type of soil.**	**4. Learn about analysis methods each soil characteristic.** **5. Use some laboratory equipm and field tools.**

9. Teaching and Learning Strategies

Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field work.** **4. Adopting student groups for field work to take measurements.** **5. Use of surveying devices and equipment.** **6. Show illustrative pictures of the devices and their accessories.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Soil development and formation	Soil principles	**A lecture w explanation and clarification**	**The exam**

the second	5	Principles of soil science	Soil principles	**A lecture w explanation and clarification**	**The exam**
the third	5	Physical properties soil	Soil principles	**A lecture w explanation and clarification**	**The exam**
the fourth	5	Soil water	Soil principles	**A lecture w explanation and clarification**	**The exam**
Fifth	5	Estimation of moist content	Soil principles	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh	5	Estimation of bullk and true density and porosity	Soil principles	**A lecture w explanation and clarification**	**The exam**
VIII	5	Colloids and soil chemical properties	Soil principles	**A lecture w explanation and clarification**	**The exam**
Ninth	5	analysis of soil particles	Soil principles	**A lecture w explanation and clarification**	**The exam**
The tenth	5	Salinity and alkalinity in the soil	Soil principles	**A lecture w explanation and clarification**	**The exam**
Eleventh	5	Preparation of saturated soil paste	Soil principles	**A lecture w explanation and clarification**	**The exam**
Twelveth	5	Biological and biochemical properties of soil	Soil principles	**A lecture w explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth	5	Soil fertility and plant nutrition	Soil principles	**A lecture w explanation and clarification**	**The exam**
Fifteenth	5	Estimation of organic matter	Soil principles	**A lecture w explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Soil principles/Abdullah Najm Al-Ani
Main references (sources)	Soil principles/Abdullah Najm Al-Ani
Recommended books and references (scientific journals, reports…)	Soil salinity / Ahmed Haider Al-Zubaidi Soil fertility / Kazem Mashhout Soil Chemistry / Kazem Mashhout Soil survey and classification / Walid Al-Akidi Soil physics/Mahdi Ibrahim Odeh
Electronic References, Websites	Local, regional and international scient books and journals concerned with s fertility, especially within scientific a virtual libraries.

Course Description Form

1. Course Name:
Soil chemistry
2. Course Code:
ASW207
3. Semester / Year:
2023_2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
60 / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ahmed Marzoog / Dr. Maysam Abedalsalam Rasheed Email: ahmed.mohamed@uoanbar.edu.iq

8. Course Objectives	
Course Objectives	a. The student understands the importance of soil chemistry as it is the basis for all soil science research. 2. For the student to understand: the importance of soil chemistry and its relationships with other sciences 3. For the student to know: the role of soil chemistry in the development of soil science

9. Teaching and Learning Strategies	
Strategy	A- Using illustrations on the board in addition to lectures. B. Use of calculator and online system C. Use all means of explanation that facilitate the delivery of information to the student. Dr.. Identify the chemical phenomena that are addressed theoretically in the field

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning method	Evaluation method

		Outcomes			
1	5 hours	Organic matter in the soil	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
2	5 hours	Humus composition, properties and components	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
3	5 hours	Soil solution chemistry	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
4	5 hours	Reactions of acids, bases, oxidation and reduction	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
5	5 hours	Interaction of soil solution and solid phase	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
6	5 hours	Practical applications of electrical double layer theory	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
7	5 hours	Ion exchange	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
8	5 hours	Ion exchange equations	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
9	5 hours	Exchange capacity of positive ions	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
10	5 hours	Dissolution equilibrium	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
11	5 hours	Carbon balance in soil	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
12	5 hours	Phosphorus balance in soil	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
13	5 hours	Soil acidity and alkalinity	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
14	5 hours	Soil regulating capacity	Soil chemistry	**A lecture with explanation and clarification**	**The exam**
15	5 hours	Soil regulating capacity	Soil chemistry	**A lecture with explanation and clarification**	**The exam**

11. Course Evaluation

Class and extra-curricular activities
Daily exams and student attendance
Duties
Monthly exams
final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of soil chemistry. Kazem Mashhout.

	1986
Main references (sources)	Spark, D.L. 1986. Soil Physical Chemistry. Sposito, G. 1981. Thermodynamic of Soil Solution. Stum, W. and J. Morgan. 1989. Aquatic Chemistry. Sposito, G.1989. the Chemistry of Soil
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Soil, water and plant analysis
2. Course Code:
ASW207
3. Semester / Year:
2023_2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
60 / 3.5
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ahmed Marzoog / Dr. Maysam Abedalsalam Rasheed Email: ahmed.mohamed@uoanbar.edu.iq

8. Course Objectives	
Course Objectives	1- That the student understand the importance of soil, water and plant analysis as it is the basis for all soil science research. 2-To distinguish between the methods of soil analysis, methods of plant analysis, and methods of water analysis. 3-To know the chemical properties of soil and the content of elements in plants and various waters.

9. Teaching and Learning Strategies	
Strategy	A- Using illustrations on the board in addition to lectures. B. Use of calculator and online system C. Use all means of explanation that facilitate the delivery of information to the student. Dr.. Identify the chemical phenomena that are addressed theoretically in the field

10. Course Structure

Wee	Hours	Required	Unit or subject	Learning method	Evaluation

k		Learning Outcomes	name		method
1	5 hours	Introduction to soil, water and plant analysis	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
2	5 hours	Soil chemical analyses	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
3	5 hours	quality of analysis metho in laboratories	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
4	5 hours	Devices for measuring electrical conductivity ar salinity estimation	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
5	5 hours	Degree of soil reaction p	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
6	5 hours	Spectroscopic analysis devices and colorimetric methods	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
7	5 hours	Flam photometer device	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
8	5 hours	Atomic absorption devic	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
9	5 hours	Determination of total nitrogen in soil	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
10	5 hours	Phosphorus	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
11	5 hours	Potassium	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
12	5 hours	Calcium carbonate	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
13	5 hours	Exchange capacity of positive ions	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
14	5 hours	Water analyses	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
15	5 hours	Plant tissue analysis	Soil, water and plant analysis	**A lecture with explanation and clarification**	**The exam**
11. Course Evaluation					
Class and extra-curricular activities					

Daily exams and student attendance Duties Monthly exams final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1- Instrumental chemical analysis Dr. Fadel Jassim and his group 1984 2- Foundations of Analytical Chemistry Dr. Moayed Qasim 1983. 3- Quantitative Analytical Chemistry Dr. Majeed Muhammad Ali Al-Qaisi and his group 1987.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Soil-Water-Plant Relationship
2. Course Code:
ASW402
3. Semester / Year:
Semester 2023_2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Waqas Mahmood Abdullateef Email: ag.waqas.mahmood@uoanbar.edu.iq
8. Course Objectives
1. Understanding the principles of Soil-Water-Plant Relationship
9. Teaching and Learning Strategies

Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field experiments.** **4. Field visits to agricultural fields.** **5. Adopting student groups to conduct separate field experiments.** **6. Use of various laboratory devices and equipment.** **7. Displaying illustrative pictures of the various manifestations of symptoms of element deficiency on plants.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Define Soil-Wat Plant Relationship	Soil-Water-Plant Relationship	**A lecture w explanation and clarification**	**The exam**
the second		Water and Wa Potential	Soil-Water-Pla Relationship	**A lecture w explanation and**	**The exam**

				clarification	
the third		Water and Wa Potential in soil	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
the fourth		Water and Wa Potential in plant	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
Fifth		Water and Wa Potential in so plant-Atmosphere Continuum	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Stress	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
VIII		Modification of Ro zone for Alleviati Plant Stress	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
Ninth		Alleviating Pla water Stress	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
The tenth		Alleviating Compaction	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
eleventh		Alleviating Aerati Stress	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
twelveth		Alleviating Temperature Stres	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Alleviating Salin Stress	Soil-Water-Pla Relationship	**A lecture w explanation and clarification**	**The exam**
Fifteenth	Final exam – theory & practical				

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Soil-Water-Plant Relationship Everything related to plant nutrition physiology from books, magazines, etc
Main references (sources)	Soil-Water-Plant Relationship
Recommended books and references (scientific journals, reports…)	Studies related to Soil-Water-Pl Relationship
Electronic References, Websites	Local, regional and international scient books and journals concerned with fertility, especially within scientific virtual libraries.

Course Description Form

1. Course Name:
Soil Microbiology
2. Course Code:
ASW402
3. Semester / Year:
Semester 2023_ 2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Theoretical lectures, laboratories, field and field visits.
6. Number of Credit Hours (Total) / Number of Units (Total)
75 hours \ 15 units
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Jamal Salih Alkobaisy \ Prof. Dr. Ali Abaas Kadim Email: ag.jamal.saleh@uoanbar.edu.iq \ ali.khadum@uoanbar.edu.iq
8. Course Objectives

Course Objectives	**1- Soil microbiology examines giving a historical overview, definition, and impo tance of studying soil microbiology.** **2- It includes the definition of the groups of soil microorganisms: bacteria, fungi algae, actinomycetes, protozoa, and root fungi.** **3- Students get acquainted with the biological transformations of N, the nitroge cycle, the decomposition of urea, the nitrite process, mineralization and assimilation, C/N ratio.** **4- The student's knowledge of the biological transformations of phosphorus: its ycle and the role of microorganisms in its transformations.** **5- Study of the relationships between microorganisms: the area surrounding the roots (the rhizosphere) and the activity of micro-organisms in this area.**

9. Teaching and Learning Strategies

Strategy	1- Brainstorming 2- Thinking strategy according to the student's ability (for example) f the student can learn the concept of the existence of microorganisms and distinguish The beneficial from the harmful. 3- Critical thinking strategy in learning, which is a term that symboli es the highest levels of thinking that aims to pose a problem. Then analy ze it logically to reach the desired solution.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessmen Method
First	5	The student gets to know the importance of studying soil microbiology.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Second	5	The student learns about the sections of soil microbiology	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Third	5	The student gets to know the groups of neighborhoods microscopic soil	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Fourth	5	The student learns about the organic matter, the carbon cycle, and the enzymatic activity in the soil.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
fifth	5	The student learns about the nitrogen cycle and its biological transformations.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
sixth	5	The student learns about biofixation for nitrogen	Soil Microbiology	Lecture, explanation and presentation of models	the exam
seventh	5	The student learns about the cycle of phosphorous and its biological transformations	Soil Microbiology	Lecture, explanation and presentation of models	the exam
eighth	5	The student learns about the cycle of sulfur and its biological transformations.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Ninth	5	The student learns about transformations iron vitality.	Soil Microbiology	Lecture, explanation and presentation of models	the exam

tenth	5	The student learns about the decomposition of pesticides in the soil.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
eleventh	5	The student learns about the relationships between Microbiology.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
twelfth	5	The student learns about the surrounding area Roots and the activity of their living things.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Thirteenth	5	The student learns about the nutrition of living things microscopic, multiplying.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
fourteenth	5	The student learns ways to isolate Some microorganisms from soil	Soil Microbiology	Lecture, explanation and presentation of models	the exam
fifteenth	5	The student will identify ways to isolate other microorganisms from soil	Soil Microbiology	Lecture, explanation and presentation of models	the exam

10.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

11.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Ghiath Muhammad Qasim and Mudar Abdul Sattar Ali (1989). Soil microbiology. Directorate of Dar Al-Kutub for Printing and Publishing. 2- - Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley.
Main references (sources)	1- Foreign, Iraqi and Arab scientific journals 2- Mmicrobiology of soil, websites.
Recommended books and references (scientific journals, reports...)	- Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley

Electronic References, Websites	Electronic lectures, scientific trips and field visits

Course Description Form

1. Course Name:
Soil Management
2. Course Code:
ASW407
3. Semester / Year:
Semester 2023_2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total) 30
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Dr. Ali Hussein Ibraheem Al-Bayati Email: ag.ali.hussein@uoanbar.edu.iq

8. Course Objectives	
Course Objectives	1- Classification of soils to series level. 2- Classifying the lands and diagnosing what is present in the governorate, while identifying the productive determinants of each land type. 3- Evaluation of lands according to their suitability for irrigated agriculture. 4- Modern administrative methods in the field of soil management according to the identified determinants in the study area.

9. Teaching and Learning Strategies	
Strategy	Through theoretical lectures and the field aspect of training in the field of soil management and identifying the determinants of land management. In addition to preparing reports on the problems facing soils and how to deal with them and use them.

10. Course Structure

Week	Ho	Required Learning	Unit or subject	Learning	Evaluation

	urs	Outcomes	name	method	method
First	3	Introduction, and getting acquainted with the basic terms in the field of soil and water management	Soil Management	Giving the lecture	Weekly exam
Second	3	Identifying the doctrines of management and their trend learning about the principle planning and its importance in and water management	Soil Management	Giving the lecture	Weekly exam
Third	3	Soil fertility and its relationship to land productivity and the methods used to investigate soil fertility and evaluate its degree of fertility.	Soil Management	Giving the lecture	Weekly exam
Fourth	3	Soil fertility and its relationship to land productivity and the methods used to investigate soil fertility and evaluate its degree of fertility.	Soil Management	Giving the lecture	Weekly exam
Fifth	3	Forensic description of the site - tasks of soil survey and classification in its management - Iraqi lands	Soil Management	Giving the lecture	Weekly exam
Sixth	-	Semester exam	Soil Management	-	-
Seventh	3	Soil tillage and its importance in the field of soil conservation - obtaining soil samples.	Soil Management	Giving the lecture	Weekly exam
Eight	3	Crop rotation - land use - land evaluation	Soil Management	Giving the lecture	Weekly exam
Ninth	3	Crop rotation - land use - land evaluation	Soil Management	Giving the lecture	Weekly exam
Tenth	3	Administrative map and how to implement it.	Soil Management	Giving the lecture	Weekly exam
Eleventh	-	Semester exam	Soil Management	-	-
Twelfth	3	The administrative methods and processes required to be carried out when managing saline and compacted soils.	Soil Management		
Thirteenth	3	The administrative methods and processes required to be carried out when managing saline and compacted soils	Soil Management	Giving the lecture	Weekly exam
Fourteenth	3	The administrative means and processes required to be carried out when managing desert soils and limestone and gypsum soils.	Soil Management	Giving the lecture	Weekly exam
Fifteenth	3	The administrative means and processes required to be carried out when managing desert soils and limestone and gypsum soils.	Soil Management	Giving the lecture	Weekly exam

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Soil management and land use - Walid Khaled Al-Akidi 2- Soil management in planning and land use.
Main references (sources)	Soil Management (1972)Davis, D.R and Eagle,D.J.8Finney J.B.
Recommended books and references (scientific journals, reports…)	1- Modern Irrigation soil (1982)/James et al 2- Methode of form Management Investigation .Y W.Y (FAO) .
Electronic References, Websites	https://elearning.fao.org/course/view.php?id=63 https://arab-ency.com.sy/tech/details/1265/

Course Description Form

1. Course Name:

Soil fertility and fertilizers

2. Course Code:

ASW302

3. Semester / Year:

Semester first/2023-2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

65 hours / 3 units

7. Course administrator's name (mention all, if more than one name)

Haneen Shartoh Sharqi
Email: ag.haneen.shartoh@uoanbar.edu.iq

8. Course Objectives

1. Understanding the principles of soil fertility a knowing the extent of the plant's need for vari nutrients and its relationship to plant productivity. **2. The extent of the importance of plant nutrients, forms in which they are found, and the factors affect their readiness for the plant.** **3. Assessing the fertility state of the soil and identifying symptoms of deficiency of various nutrients that app on the plant.**	**4. Knowing how much, when and h to add these nutrients and in w form (chemical or organic).** **5. Calculating the economic feasibi and cost of added fertilizers, alo with raising awareness ab reducing the amount of th fertilizers added without affecting yield.**

9. Teaching and Learning Strategies

Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field experiments.** **4. Field visits to agricultural fields.** **5. Adopting student groups to conduct separate field experiments.** **6. Use of various laboratory devices and equipment.** **7. Displaying illustrative pictures of the various manifestations of symptoms of element deficiency on plants.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Definition of growth a factors affecting it methods used fertility evaluation.	Soil fertility and fertilizers	**A lecture w explanation and clarification**	**The exam**

the second		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
the third		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
the fourth		The necessary eleme for plant growth a their classification + foundations that rely them: implementing field experiment potting experiment evaluate soil fertility	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Fifth		Nitrogen + Estimat the ready quantities c number of macro a micro nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Phosphorus Estimating the rea quantities of a numl of macro and mi nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
VIII		Potassium Estimating the rea quantities of a numl of macro and mi nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Ninth		Calcium, magnesiu and sulfur + estimat the ready quantities c number of macro- a micro-nutrients,	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
The tenth		Micronutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Eleventh		Beneficial nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
twelveth		Organic matter in soil and its importa	Soil fertility a fertilizers	**A lecture w explanation**	**The exam**

		in fertility + Estimat of the organic matter the soil		**and clarification**	
Thirteenth	Second month exam - theoretical and practical				
Fourteenth		Soil fertility evaluati methods for estimat fertility status	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Fifteenth		Soil fertility evaluati methods for estimat fertility status	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Al-Naimi, Saadallah. 1999 Fertiliz and soil fertility. Ministry of Hig Education and Scientific Resear University of Mosul. -2 Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 3 - Havlin, J.L., Tisdale, S.L., Nels W.L., and Beaton, J.D. 2005, Soil Ferti and Fertilizers, 5th edition. USA .
Main references (sources)	1-Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 2 - Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a microbiological properties. Madison
Recommended books and references (scientific journals, reports…)	1- Al-Ani, Abdullah Najm, 19 Principles of Soil Science, Ministry Higher education and scientific research 2- White, R.E, 1979, Introduction to principles and practices of soil scien BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a microbiological properties. Madis Wisconsin, USA
Electronic References, Websites	Local, regional and international scient books and journals concerned with s fertility, especially within scientific a virtual libraries.

Course Description Form

1. Course Name:

Soil fertility and fertilizers

2. Course Code:

ASW302

3. Semester / Year:

Semester 2023_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

Number of Credit Hours =5(2theoretical hours + 3practical hours) Number of Units (3.5

7. Course administrator's name (mention all, if more than one name)

Name: Mohammed Obed Sallume
Email: ag.mohammed.obed@uoanbar.edu.iq

8. Course Objectives

1. Understanding the principles of soil fertility a knowing the extent of the plant's need for vari nutrients and its relationship to plant productivity. **2. The extent of the importance of plant nutrients, forms in which they are found, and the factors affect their readiness for the plant.** **3. Assessing the fertility state of the soil and identifying symptoms of deficiency of various nutrients that app on the plant.**	**4. Knowing how much, when and h to add these nutrients and in w form (chemical or organic).** **5. Calculating the economic feasibi and cost of added fertilizers, alo with raising awareness ab reducing the amount of th fertilizers added without affecting yield.**

9. Teaching and Learning Strategies

Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field experiments.** **4. Field visits to agricultural fields.** **5. Adopting student groups to conduct separate field experiments.** **6. Use of various laboratory devices and equipment.** **7. Displaying illustrative pictures of the various manifestations of symptoms of element deficiency on plants.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

The first	5	Definition of growth a factors affecting it methods used fertility evaluation.	Soil fertility and fertilizers	**A lecture w explanation and clarification**	**The exam**
the second		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
the third		The foundations of s and plant relationshi soil fertility, a biological readiness the methods used fertility evaluation	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
the fourth		The necessary eleme for plant growth a their classification + foundations that rely them: implementing field experiment potting experiment evaluate soil fertility	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Fifth		Nitrogen + Estimat the ready quantities c number of macro a micro nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Phosphorus Estimating the rea quantities of a numl of macro and mi nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
VIII		Potassium Estimating the rea quantities of a numl of macro and mi nutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Ninth		Calcium, magnesiu and sulfur + estimat the ready quantities c number of macro- a micro-nutrients,	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
The tenth		Micronutrients	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
eleventh		Beneficial nutrients	Soil fertility a	**A lecture w**	**The exam**

			fertilizers	**explanation and clarification**	
twelveth		Organic matter in soil and its importa in fertility + Estimat of the organic matter the soil	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Soil fertility evaluati methods for estimat fertility status	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**
Fifteenth		Soil fertility evaluati methods for estimat fertility status	Soil fertility a fertilizers	**A lecture w explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Al-Naimi, Saadallah. 1999 Fertiliz and soil fertility. Ministry of Hig Education and Scientific Resear University of Mosul. -2 Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 3 - Havlin, J.L., Tisdale, S.L., Nels W.L., and Beaton, J.D. 2005, Soil Ferti and Fertilizers, 5th edition. USA .
Main references (sources)	1-Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 2 - Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a microbiological properties. Madison
Recommended books and references (scientific journals, reports…)	1- Al-Ani, Abdullah Najm, 19 Principles of Soil Science, Ministry Higher education and scientific research 2- White, R.E, 1979, Introduction to principles and practices of soil scien BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a

	microbiological properties. Madis Wisconsin, USA
Electronic References, Websites	Local, regional and international scient books and journals concerned with fertility, especially within scientific virtual libraries.

Course Description Form

13. Course Name:	
Soil conservation	
14. Course Code:	
ASW408	
15. Semester / Year:	
First 2023_2024	
16. Description Preparation Date:	
2024/1/25	
17. Available Attendance Forms:	
In-person	
18. Number of Credit Hours (Total) / Number of Units (Total)	
70 / 49	
19. Course administrator's name (mention all, if more than one name)	
Dr. Farhan Mohammed Jasim (ag.farhan.mohammad@uoanbar.edu.iq) Mohammed Salim Jumaah (ag.mohammed.s.jumaah@uoanbar.edu.iq)	
20. Course Objectives	
Course Objectives	**Understanding the basics of soil maintenan its relationship to agriculture, and how manage soil to increase agricultural productio**
21. Teaching and Learning Strategies	
Strategy	

22. Course Environment

Week	Hours	Desired Learning Outcomes	Unit / Course Topic	Teaching Method	Assessment Method
1	5	General principles and concepts of maintenance	Soil Maintenance	In-person	-
2	5	Description of maintenance mechanisms	Soil Maintenance	In-person	-
3	5	Cases and risks of improper methods globally, regionally, and locally	Soil Maintenance	In-person	-
4	-	First-month exam			
5	5	Soil maintenance techniques	Soil Maintenance	In-person	-
6	5	The role and relationship of climate and soil in the maintenance process	Soil Maintenance	In-person	-
7	5	Vegetative cover - salinity – drought	Soil Maintenance	In-person	-
8	5	Modern methods in soil maintenance	Soil Maintenance	In-person	-
9	-	Second-month exam			
10	5	Minimizing soil damage operations	Soil Maintenance	In-person	-
11	5	Applications of maintenance operations	Soil Maintenance	In-person	-
12	5	Methods and means of soil maintenance	Soil Maintenance	In-person	-
13	5	Methods and tools for measuring soils that require maintenance	Soil Maintenance	In-person	-
14	-	General review			

11.Course Evaluation

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Soil conservation / written by Mohammad Abdulfattah
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Yes

Course Description Form

1. Course Name:

Plant nutrition

2. Course Code:

ASW409

3. Semester / Year:

Semester second/2023-2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

65 hours / 3 units

7. Course administrator's name (mention all, if more than one name)

Haneen Shartoh Sharqi
Email: ag.haneen.shartoh@uoanbar.edu.iq

8. Course Objectives

Study of nutrients and their physiological functions wit plants, symptoms of deficiency, and methods of treat them.	

9. Teaching and Learning Strategies

Strategy	**Introducing students to the importance of nutrients and symptoms of their deficiency, which are reflected in th physiological functions and the impact on the quantity and qua of agricultural production...**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Definition, division and importance of nutrients	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
the second		Factors affecting the readin of nutrients	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
the third		Causes of nutrient deficien	Plant nutrition	**A lecture w explanation**	**The exam**

				and clarification	
the fourth		Inorganic mineral composit of plants	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
Fifth		Mineral nutrition and yiel quality	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Quantitative Relationship (Law of Determinant Fact and Law of Diminishing Returns)	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
VIII		First monthly exam	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
Ninth		Foliar feeding	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
The tenth		Mechanism of bioabsorption o nutrients	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
eleventh		The importance of Michae constant and its derivatio	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
twelveth		Theories of passive absorpt of nutrients	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Theories of bioabsorption nutrients	Plant nutrition	**A lecture w explanation and clarification**	**The exam**
Fifteenth		Follow the theories of biosorption	Plant nutrition	**A lecture w explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of plant nutrition Sadul Najim Al-Niemi1988Najm Al-Ani1981
Main references (sources)	Plant Nutrition Guide, Youssef Abu Dah 1987
Recommended books and references (scientific journals, reports…)	1- Principles of Plant Nutrition, Saadalla Najm Al-Nuaimi, 1988. 2- Plant Nutrition Guide, Youssef Abu Dahi 3- Soilless farming systems Al-Sahhaf Local, regional and international books a scientific journals concerned with pl nutrition
Electronic References, Websites	Local, regional and international scient books and journals concerned with s plant nutrition, especially within scient and virtual libraries.

Course Description Form

1. Course Name:
Organic matter
2. Course Code:
ASW301
3. Semester / Year:
Semester first/2023-2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3 units
7. Course administrator's name (mention all, if more than one name)
Haneen Shartoh Sharqi Email: ag.haneen.shartoh@uoanbar.edu.iq
8. Course Objectives
Studying the sources of organic matter in the soil, transformations, and their impact on the soil and plants
9. Teaching and Learning Strategies
Strategy — **It highlights the importance of organic matter and orga fertilizers and their effect on soil characteristics and consid them a good alternative to chemical fertilizers for a cl environment..**
10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	The history and introduction of organic matter and some of its important definitions	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
the second		Sources of organic matter in soil	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
the third		Components of plant waste	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
the fourth		Monthly exam	**Organic matter**	**A lecture w**	**The exam**

				explanation and clarification	
Fifth		Decomposition of organic compounds and formation of	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Carbon cycle in nature	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
VIII		Organic compounds contair nitrogen and their mineralization	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
Ninth		Organic compounds containing phosphorus and their mineralization	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
The tenth		Sulfur-containing organic compounds and their mineralization	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
eleventh		The effect of climate and plants on the soil organic matter content	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
twelveth		Some characteristics of organic soil HISTOSOL, the effects of organic matter on soil characteristics and the relationship between them	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		The C:N ratio, its importance and value in some plants and organisms, the amount of organic matter and nitrogen in the soil	**Organic matter**	**A lecture w explanation and clarification**	**The exam**
Fifteenth		Organic Agriculture	**Organic matter**	**A lecture w explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1-Al-Naimi, Saadallah. 1999 Fertiliz and soil fertility. Ministry of Hig Education and Scientific Resear University of Mosul. -2 Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 3 - Havlin, J.L., Tisdale, S.L., Nels W.L., and Beaton, J.D. 2005, Soil Ferti and Fertilizers, 5th edition. USA .
Main references (sources)	1-Awad, Kazem Mashhout 19 Fertilization and Soil Fertility, Ministry Higher Education and Scientific Resear University of Basra. 2 - Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a microbiological properties. Madison
Recommended books and references (scientific journals, reports…)	1- Al-Ani, Abdullah Najm, 19 Principles of Soil Science, Ministry Higher education and scientific research 2- White, R.E, 1979, Introduction to principles and practices of soil scien BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of s analyisi, part 2 2nd Chemical a microbiological properties. Madis Wisconsin, USA
Electronic References, Websites	Local, regional and international scient books and journals concerned with s organic matter, especially within scient and virtual libraries.

Course Description Form

1. Course Name:
Irrigation
2. Course Code:
ASW303
3. Semester / Year:
Semester/1 2023_2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Saad Enad Harfoush Email: saad.harfoush@uoanbar.edu.iq Name:Hudhayfah Jassim Mohammed
8. Course Objectives

1. Reducing water waste. **2. Calculating the amounts of added water, i.e. water consumption.** **3. Using modern irrigation methods.**	**4. Study all types of competencies.** **5. Tip and deep penetration.**

9. Teaching and Learning Strategies	
Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field work.** **4. Adopting student groups for field work to take measurements.** **5. Use of surveying devices and equipment.** **6. Show illustrative pictures of the devices and their accessories.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	A historical overview irrigation in Iraq	Irrigation	**A lecture with explanation and clarification**	**The exam**
2	5	The infiltration	Irrigation	**A lecture w**	**The exam**

				explanation and clarification	
3	5	Irrigation water measureme	Irrigation	**A lecture with explanation and clarification**	**The exam**
4	5	Irrigation water transporta and distribution	Irrigation	**A lecture with explanation and clarification**	**The exam**
5	First month exam - theoretical and practical				
6	5	Irrigation efficiencies	Irrigation	**A lecture with explanation and clarification**	**The exam**
7	5	Water needs, first part	Irrigation	**A lecture with explanation and clarification**	**The exam**
8	5	Water needs, part two	Irrigation	**A lecture with explanation and clarification**	**The exam**
9	5	Irrigation methods	Irrigation	**A lecture with explanation and clarification**	**The exam**
10	Second month exam - theoretical and practical				
11	5	Pulse wave irrigation Drip irrigation	Irrigation	**A lecture with explanation and clarification**	**The exam**
12	5	Sprinkler irrigation	Irrigation	**A lecture with explanation and clarification**	**The exam**
13		Water pumping and capa calculations for pumps			
14		Third month exam- theoretical and practical			
15		Review			

11. Course Evaluation

1- Rapid daily tests. 2- Theoretical tests. 3- Practical tests. 4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Irrigation, its basics and applications/ Nabil Ibra Al-Tayef - Issam Khudair Al-Hadithi.
Main references (sources)	Irrigation, its basics and applications/ Nabil Ibra Al-Tayef - Issam Khudair Al-Hadithi
Recommended books and references (scientific journals, reports…)	Irrigation and drainage / Laith Ismail Khalil. Irrigation and drainage / Muhammad Abdullah A Najm. Soil physics/Mahdi Ibrahim Odeh
Electronic References, Websites	Local, regional and international books a scientific journals concerned w irrigation science, especially wit scientific and virtual libraries.

Course Description Form

23. Course Name:
Irrigation systems technologies
24. Course Code:
ASW408
25. Semester / Year:
the first 2023_2024
26. Description Preparation Date:
2024/1/25
27. Available Attendance Forms:
Attendance (theoretical + practical)
28. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3.5 units
29. Course administrator's name (mention all, if more than one name)
Name: Wathib S S Alnuaymy Email: ag.wathib.shukri@uoanbar.edu.iq
30. Course Objectives
1- It aims to teach students calculations and dealing with different irrigation systems **2- Acquiring the necessary skills in dealing with irrigation systems. 3- Identifying the problems, solutions, and available alternatives**
31. Teaching and Learning Strategies
1- Identify the mathematical equations related to irrigation systems **2- Methods of calculating irrigatio quantities** **3- Identify the types of systems and deal with them** **4- Identify suitability and adaptati**
Skills objectives of the programme **1 - Practical lessons** **2- Field practices** **3 - Identify the types of irrigation systems and costs of installing them**

32. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

The first	2 theoretical + practical	Learn about irrigation efficiency equations an calculations.	irrigation efficiency	**Theoretical + practical**	**Quiz**
the second	theoretical + practical	Learn about water budget equations an calculations	water budget	**Theoretical + practical**	**Quiz**
the third	theoretical + practical	Learn about equations an calculations o water functio	water functions	**Theoretical + practical**	**Quiz**
the fourth	2 theoreti cal + 3 practica l	Learn about surface irrigation equations an calculations	surface irrigation	**Theoretical + practical**	**Quiz**
Fifth	heoretical + 3 ractical	Exam		**Theoretical + practical**	
Sixth	heoretical + 3 ractical	Learn about strip irrigatio calculations, equations, an design	strip irrigat	**Theoretical + practical**	**Quiz**
Seventh	heoretical + 3 ractical	Learn about basin irrigati calculations, equations, an design	basin irrigation	**Theoretical + practical**	**Quiz**
VIII	heoretical + 3 ractical	Learn about furrow irrigation calculations, equations an design	furrow irrigation	**Theoretical + practical**	**Quiz**
Ninth	heoretical + 3 ractical	Exam		**Theoretical + practical**	
The tenth	heoretical + 3 ractical	Learn about fixed sprinkle irrigation calculations, equations an design	fixed sprink	**Theoretical + practical**	**Quiz**
eleventh	heoretical + 3	Learn about	mobile	**Theoretical +**	**Quiz**

	ractical	calculations, equations, an design of mobile sprinkler irrigation	sprinkler	**practical**	
twelveth	theoretical + 3 practical	Learn about dr irrigation calculations, equations and design	drip irrigatio	Theoretical + practical	Quiz
	2 theoretical + 3 practical	Exam		Theoretical + practical	
fourteenth	2 theoretical + 3 practical	The student understands the topic	Reviews + fie practice	Theoretical + practical	Quiz
Fifteenth	2 theoretical + 3 practical	The student understands the topic	Reviews + fie practice	Theoretical + practical	Quiz

33. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

34. Learning and Teaching Resources

Required textbooks (curricular books, if any	- Hajim, Ahmed and Saad Saeed Al-Dewa J. 1990. Irrigation design and practice. The second part. translator. Ministry of Higher Education And Scientific Research, University of Mosul. - Hajim, Ahmed Youssef and Haqi Youssef Ismail. 1992 Field Irrigation Systems Engineering, Ministry of Higher Education and Scientific Research, University of Al Mosul. Number of pages: 484
Main references (source	Al-Tayef, Nabil Ibrahim, Issam Khudair Al-Hadithi, 1988. Irrigation, i basics and applications, College of Agriculture - University of Baghda
Recommended books and references (scientific journals, reports…)	- Al-Hadithi, Issam Khudair, Ahmed Madloul Al-Kubaisi, and Wyatt Khudair Al-Hadithi, 2010. Modern irrigation technologies and topics. Another in the water issue. And the Ministry of Higher Education and Scientific Research. Anbar University. faculty of Agriculture.
Electronic References, Websites	Local, regional and international scientific books and journals concern with soil fertility, especially within scientific and virtual libraries.

Course Description Form

35. Course Name:
Plane space
36. Course Code:
ASW109
37. Semester / Year:
Second 2023_2024
38. Description Preparation Date:
2024/1/25
39. Available Attendance Forms:
Attendance (theoretical + practical)
40. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3.5 units
41. Course administrator's name (mention all, if more than one name)
Name: Wathib S S Alnuaymy Email: ag.wathib.shukri@uoanbar.edu.iq

42. Course Objectives	
- Elevated areas and settlement **3- Size drawings of all kinds** **4- How to use**	**- Make the student able to measure direct and indirect distances and areas Raise areas, level, and scale graphics of all kinds**

43. Teaching and Learning Strategies	
1- Identify the mathematical equations related to irrigation systems **2- Methods of calculating irrigatio quantities** **3- Identify the types systems and deal wi them** **4- Identify suitabilit and adaptation**	**– The program's skill objectives** **1 - Practical lessons** **2- Field practices** **3 - Identify the types of maps and the costs of creating them**

44. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	2 theoretical + 3 practical	Learn about direct measurement methods and methods.	direct measurement	**Theoretical + practical**	**Quiz**
the second	2 theoretical + 3 practical	Learn about ways and methods of indirect measurement	indirect measurement	**Theoretical - practical**	**Quiz**
the third	2 theoretical + 3 practical	Learn about the ways and methods of erecting columns	erecting columns	**Theoretical - practical**	**Quiz**
the fourth	2 theoretical + 3 practical	Learn about th ways and methods of dropping columns	dropping columns	**Theoretical - practical**	**Quiz**
Fifth	2 theoretical + 3practical	Exam		**Theoretical - practical**	
Sixth	2 theoretical + 3 practical	Learn about th ways and methods of making paralle	parallels	**Theoretical - practical**	**Quiz**
Seventh	2 theoretical + 3 practical	Learn about wa and means of avoiding obstacles	avoiding obstacles	**Theoretical - practical**	**Quiz**
VIII	2 theoretical + 3 practical	Learn about t methods and methods of drawing tape maps	drawing tape maps	**Theoretical - practical**	

Ninth	2 theoretical + 3 practical	Exam		**Theoretical - practical**	
The tenth	2 theoretical + 3 practical	Learn about th methods and methods of drawing maps using a planar plate	drawing maps using a planar	**Theoretical - practical**	**Quiz**
Eleventh	2 theoretical + 3 practical	Learn about calculations, equations and settlement des	settlement desi	**Theoretical - practical**	**Quiz**
twelveth	2 theoretical + 3 practical	Learn about calculations, equations, and design of longitudinal sections	longitudinal sections	**Theoretical - practical**	**Quiz**
	2 theoretical + 3 practical	Exam		**Theoretical - practical**	
fourteenth	2 theoretical + 3 practical	Learn about the methods and methods of drawing contou maps	drawing contou maps	**Theoretical - practical**	**Quiz**
Fifteenth	2 theoretical + 3 practical	The student understands the topic	Reviews + field practice	**Theoretical - practical**	**Quiz**

45. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

46. Learning and Teaching Resources

Required textbo (curricular books any)	
Main references	- Khafaf, Riyad Saleh, 2000, Foundations of Plane Area and

(sources)	Topography, College of Agriculture, University of Mosul, Iraq.
Recommended books and references (scientific journals, reports…)	Ness, Samir Muhammad, 2004, Agricultural Survey, Department of Agricultural Engineering, Faculty of Agriculture, Alexandria University, Egypt.
Electronic References, Websites	Local, regional and international scientific books and journals concern with soil fertility, especially within scientific and virtual libraries.

Course Description Form

1. Course Name:
Mathematics
2. Course Code:
ASW104
3. Semester / Year:
First Semester/2023-2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
in-person learning
6. Number of Credit Hours (Total) / Number of Units (Total)
30/2
7. Course administrator's name (mention all, if more than one name)
Name: Dr.Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq
8. Course Objectives

Course Objectives	A-Ability to understand the principle of mathematical functions B-Increasing the skills of students using it to solve the problems C-Ability the undergraduate students to use these skills in different fields. D-Ability the students to graph t equations, inequalities and all function

9. Teaching and Learning Strategies

Strategy	A1. Analysis the problems and understand how can you be ability to solve it. A2. Testing these equations in the practical experimental. A3. Using equations to find variables in the problems. A4. Ability to convert the scales on the real number line. A5. Ability of student to evaluate the problems, and writing the scientific reports. A6. The student can acquire the practical and scientific experience his specialized field.it.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	2	Analysis the problems and understand how can you be able to solve it.	The rate of change function	Theoretical Lectures,white board	questions , discussions, and examples
Second	2	Ability to use suitable coordinates in the problems.	Cartesian coordinates	on the white bo	questions , discussions, and examples
Third	2	Ability to use suitable coordinates in the problems.	Increments in coordinates	on the white board, Homewo	questions , discussions, and examples
Fourth	2	Using slope to find the variables in the problems.	Slope and angles of inclination	on the white bo	questions , discussions, and examples
Fifth	2	Exam of first month			
Sixth	2	special cases of slope of lines	Properties of parallel and perpendicular lines	on the white bo	questions , discussions, and examples
Seventh	2	Boundary conditions for	Domain and Range of functions	on the white bo	questions , discussions, and examples
Eighth	2	solving equation of Absolute values and inequalities	Absolute values for equations and inequalities	on the white bo	questions , discussions, and examples
Ninth	2	solving equations of Exponential and logarithm	Exponential and logarithm functions	on the white bo	questions , discussions, and examples
Tenth	2	Exam of second month			
Eleventh	2	solving equations of Trigonometric	Trigonometric functions	on the white bo	questions , discussions, and examples
Twelfth	2	solving equations of Inverse Trigonometric.	Inverse Trigonometric functions	on the white bo	questions , discussions, and examples
Thirteenth	2	Prove identities of Trigonometric functions	Identities of Trigonometric functions	on the wl board, Homewo	questions , discussions, and examples
Fourteenth	2	Testing these equations in the practical experimental.	Solve all homework and problems	on the wl board, Homewo and Applicati by computers	questions , discussions, and examples
		Exam of the third month			

11. Course Evaluation

Theory exam 30%, Practical Quiz 10%, Practical exam 10%, final exam 50%.

Final degree from 100%.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Calculus, Thomas, 11Ed, 2006, Addison-Wesley, United States.
Recommended books and references (scientific journals, reports…)	Understanding Basic Calcul S.K.Chung, Wolfram,2007, Hc Kong.
Electronic References, Websites	https://en.wikipedia.org/wiki/Function_ (mathematics(

Course Description Form

1. Course Name:
Fertilizer technologies
2. Course Code:
ASW410
3. Semester / Year:
Semester second/2023-2024
4. Description Preparation Date:
2024/1/25
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3 units
7. Course administrator's name (mention all, if more than one name)
Haneen Shartoh Sharqi Email: ag.haneen.shartoh@uoanbar.edu.iq
8. Course Objectives
Studying the characteristics of fertilizers and their manufacturing and addition techniques.
9. Teaching and Learning Strategies
Strategy — **Introducing students to how to evaluate fertilizers, their properties, modern manufacturing techniques, and the mechanism of adding them...**
10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Modern concepts relate to fertilizers and their uses	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
the second		Fertilizer classification	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
the third		Organic and biofertilize	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
the fourth		Types of fertilizers and	Fertilizer technologies	**A lecture wi explanation**	**The exam**

		methods of preparing them		**and clarification**	
Fifth		Mineral fertilizers: Nitrogen fertilizers, thei behavior in soil and decomposition, classification, manufacture and management.	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Phosphorous fertilizers their behavior in soil ar decomposition, classification, manufacture and management	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
VIII		Monthly exam (theoreti + practical)	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
Ninth		Potassium fertilizers, th behavior in soil and decomposition, classification, manufacture and management	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
The tenth		Calcium, magnesium and sulfur fertilizers: their behavior ir soil and decomposition, classification, manufacture an management	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
eleventh		11 Micronutrient fertilizers: their behavio	Fertilizer technologies	**A lecture wi explanation and**	**The exam**

		in soil and decompositi classification, manufacture and management		**clarification**	
twelveth		Compound fertilizers a their preparation	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Methods of adding different fertilizers: mineral, organic, solid bio–fertilizers, and with irrigation water	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**
Fifteenth		Fertilizers and environmental pollution	Fertilizer technologies	**A lecture wi explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nour El-Din Shawq,2012, Fertilizer technologies and uses
Main references (sources)	Nour El-Din Shawq,2012, Fertilizer technologies and uses
Recommended books and references (scientific journals, reports…)	Nour El-Din Shawq,2012, Fertilizer technologies and uses
Electronic References, Websites	Local, regional and international scientif books and journals concerned with soil soil, especially within scientific and virt libraries.

Course Description Form

1. Course Name:

Engineering Drawing

2. Course Code:

3. Semester / Year: semester

2023_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance

6. Number of Credit Hours (Total) / Number of Units (Total)

45\2

7. Course administrator's name (mention all, if more than one name)

Name: Marwa Yass Khudair
Email: ag.marwa.yass@uoanbar.edu.iq

8. Course Objectives

Basic Understanding: Introducing students to the fundame concepts of geometric drawing, including symbols, dimensions, scales. Analysis and Interpretation: Empowering students to anal and interpret geometric drawings and diagrams efficiently. Techn Skills Development: Enhancing students' skills in using geome drawing tools such as traditional tools like ruler and compass.	

9. Teaching and Learning Strategies

Strategy	Interactive Teaching: Using classroom discussions and workshops to enhance interaction am students and exchange of ideas. This helps deepen students' understanding of geometric drav concepts and their applications. Flipped Classroom: Students review theoretical content outside the classroom, while class tim allocated for practical applications. Cooperative Learning: Encouraging students to work in groups to promote collaboration knowledge exchange, leading to improved communication and teamwork skills. Utilization of Diverse Resources: Providing a wide range of educational resources, inclu instructional videos, e-books, and scientific articles, to enhance understanding and exp knowledge.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Absolute Value	Engineering drawing	Attendance	Class assig ent
2	2	Learning Draw Scale and	Engineering drawing	Attendance	Class assig

		Importance			ent
3	2	Introduction Types of Lines Engineering Drawing	Engineering Drawing	Attendance	Class assig ent
4	2	Learning Bisecting	Engineering Drawing	Attendance	Class assig ent
5	2	Geometric Operations	Engineering Drawing	Attendance	-
6	2	Parallelism Dividing Li Equally and Different Proportions	Engineering Drawing	Attendance	Class assig ent
7	2	Exam	Engineering Drawing	Attendance	Class assig ent
8	2	Learning Triangular, Quadrilateral, Pentagon Shape	Engineering Drawing	Attendance	Class assig ent
9	2	Learning Hexagonal, Heptagonal, Octagonal Shap	Engineering Drawing	Attendance	Class assig ent
10	2	Learning Nona and Deca Shapes	Engineering Drawing	Attendance	-
11	2	Learning Indivic Polygons	Engineering Drawing	Attendance	Class assig ent
12	2	Learning Pa Polygons	Engineering Drawing	Attendance	Class assig ent
13	2	oval	Engineering Drawing	Attendance	Class assig ent
14	2	exam	Engineering Drawing	Attendance	-

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Engineering drawing
Main references (sources)	Learning Applications of Engineering Draw
Recommended books and references (scientific journals, reports…)	Engineering Operations Handbook
Electronic References, Websites	-Geometry Learning Pages

Course Description Form

47. Course Name:	
Desertification control	
48. Course Code:	
ASW408	
49. Semester / Year:	
Second / 2023_2024	
50. Description Preparation Date:	
2024/1/25	
51. Available Attendance Forms:	
In-person	
52. Number of Credit Hours (Total) / Number of Units (Total)	
70 / 49	
53. Course administrator's name (mention all, if more than one name)	
Dr. Farhan Mohammed Jasim (ag.farhan.mohammad@uoanbar.edu.iq) Mohammed Salim Jumaah (ag.mohammed.s.jumaah@uoanbar.edu.iq)	
54. Course Objectives	
Course Objectives	**Understanding the basics of desertification, relationship with agriculture, and how to redu the dangers of desertification**
55. Teaching and Learning Strategies	
Strategy	

10- Course Schedule					
Week	**Hours**	**Learning Outcomes**	**Unit / Topic**	**Teaching Method**	**Assessment Method**
1	5	Introduction to the concept of desertification and related terminologies	Desertification	In-person	-
2	5	Forms and causes of desertification, manifestations, risks, and resulting losses (globally, regionally, and locally)	Desertification	In-person	-
3	5	Drought	Desertification	In-person	-
4	Exam - First Month				
5	5	Sand dunes and factors of their formation	Desertification	In-person	-
6	5	Morphological forms of sand dunes (formation and possibilities of stabilization)	Desertification	In-person	-
7	5	Causes of sand and dust storms in Iraq	Desertification	In-person	-
8	5	Wind erosion and windbreaks	Desertification	In-person	-
9	Exam - Second Month				
10	5	Global warming	Desertification	In-person	-
11	5	Afforestation methods and modern techniques to combat desertification	Desertification	In-person	-
12	5	Water harvesting	Desertification	In-person	-
13	5	Adaptation to desertification phenomenon	Desertification	In-person	-
14	General Review				

13.Course Evaluation	
14.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Desertification control / written by Dr. Majid Kha Abbas, College of Agriculture - University of Bagh
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Yes

Course Description Form

56. Course Name:	
Crimes of the former Baath regime / AL Baath Crimes	
57. Course Code:	
BACR205	
58. Semester / Year:	
SEMESTER 2023_2024	
59. Description Preparation Date:	
2024/1/25	
60. Available Attendance Forms:	
Presence	
61. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours 2 units per week	
62. Course administrator's name (mention all, if more than one name)	
Name: mohammed kareem shaker Email: ag.mohammed.kareem@uoanbar.edu.iq	
63. Course Objectives	
1-Preparing educated students with correct ideas 2- Instilling noble values and morals	**3- Helping in writing scientific research objectively** **4- Know the facts and not falsify them** **5- Knowing the repressive methods used by the former regime**
64. Teaching and Learning Strategies	
Strateg	1- Enabling students to obtain the intellectual framework 2- Preparing students with a correct culture 3- Instilling and preserving the principles of patriotism 4- Developing the intellectual side of students 5- Vocabulary formulation and its absence 6- Expanding cognitive awareness

65. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Understanding and learning skills development Know the facts Knowledge of sound principles Knowledge and awareness Learn high values raising awareness Knowledge and perception Crystallization of ideas Mind development Learn the facts Brief and learn Discrimination Understanding and perception The right style	Violation of rights and freedoms A descriptive overview political systems The Baathist regime's violation of rights and freedoms The impact of the behav of the former Baathist regime on the society The impact of the transitional period The psychological field the social field Religion and state First month exam Culture, media, and the militarization of society The impact of oppressio and wars on the environment and population The use of internationa prohibited weapons an environmental pollutio Scorched earth policy + drying of the marshes Destruction of the agricultural and animal environment Mass graves Second month exam	My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence	the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam

66. Course Evaluation

1- Through daily and monthly exams, homework, oral exams, attendance, and
2- class activities.

67. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Curriculum Crimes of the former Baath regime
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Arabic
2. Course Code:
BRAL104
3. Semester / Year:
SEMESTER 2023_2024
4. Description Preparation Date:
25/1//2024
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours 2 units per week
7. Course administrator's name (mention all, if more than one name)
Name: mohammed kareem shaker Email: ag.mohammed.kareem@uoanbar.edu.iq

8. Course Objectives	
1- Preparing students, including the Arabic language 2- Instilling the values of the Arabic language the hearts of students	**3–Assistance in writing scientific research in objective Arabic** **4– Familiarity with Arabic language vocabulary an correct spelling** **5– Knowing the common mistakes**

9. Teaching and Learning Strategies	
Strategy	1- Enabling students to obtain the intellectual framework for the Arabic language subject 2- Preparing students linguistically and educationally 3- A solid knowledge of the Arabic language vocabulary that enables the student formulate Arabic vocabulary 4- Avoid spelling mistakes 5- Correct pronunciation of some vocabulary 6- Expanding cognitive awareness

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding an	Sections of speech	My presence	the exam
2	2	learning	punctuation marks	My presence	the exam
3	2	skills developmen	Common linguistic	My presence	the exam
4	2	Correct spelling	errors	My presence	the exam
5	2	Know the errors	The difference	My presence	the exam
6	2	Knowledge and	between dha and	My presence	the exam
7	2	awareness	dha	My presence	the exam
8	2	Learn to parse	Solar and lunar lar	My presence	the exam
9	2	Learn to parse	The simple and	My presence	the exam
10	2	Knowledge and	marbuta tā’	My presence	the exam
11	2	perception	Number and numb	My presence	the exam
12	2	Learn Arabic	Suspicious actions	My presence	the exam
13	2	Proper	Imperfect verbs	My presence	the exam
14	2	pronunciation	The subject and th	My presence	the exam
15	2	Learn the	predicate	My presence	
		differences	Sound feminine		
		Brief and learn	plural		
		Discrimination	Sound masculine		
		Understanding an	plural		
		perception	The parsing		
		The right style	Discrimination		
			Exception		

11. Course Evaluation

1- Through daily and monthly exams, homework, oral exams, attendance, and class activities.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Arabic language books
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Hydrology

2. Course Code:

ASW404

3. Semester / Year:

Semester/1 2023_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

60 hours / 3 units

7. Course administrator's name (mention all, if more than one name)

Prof. Dr. Shuker Mahmood Hasan
smhasan@uoanbar.edu.iq

8. Course Objectives

1. Teaching UG students the origin the properties of natural water.
2. Teaching UG students the concepts of precipitations and its causes.
3. Teaching UG students the concepts of snow and its solubility.
4. Teaching UG students the concepts of floods and methods of controlling them.

9. Teaching and Learning Strategies

Strategy
1. Traditional means of explanation and clarification.
2. Electronic means of explanation and clarification.
3. Field work.
4. Adopting student groups for field work to take measurements.
5. Use of surveying devices and equipment.
6. Show illustrative pictures of the devices and their accessories.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
One	5	Define Hydrology ،Hydraulic Circle Hydraulic equation	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Two	5	Precipitation :types and reasons	Hydrology	**A lecture with explanation and**	**The exam**

				clarification	
Three	5	Snow :importance and results	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Four	5	Evaporation, transpiration, infiltrat	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Five	First month exam - theoretical and practical				
Six	5	Stream flow measurement	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Seven	5	Water timer curves	Hydrology	**A lecture with explanation and clarification**	**The exam**
Eight	5	Floods and its control	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Nine	5	Floods expectations	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Ten	Second month exam - theoretical and practical				
Eleven	5	Sub surface water and its resource	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Twelve	5	Soil Water and its vertical distributi	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Thirteen	5	Ground water movement	Hydrology	**A lecture with explanation ar clarification**	**The exam**
Fourteen		Hydraulic of wells			
Fifteen	Third month exam - theoretical and practical				

11. Course Evaluation

1- Rapid daily tests.
2- Monthly tests.
3- Preparing and delivering seminars.
4- Daily posts.
5- preparing the special problem.

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Hydrology and, its applications / Dr. Ali Kashif Alkata.
Main references (sources)	Engineering Hydrology 1992 / Mohamad Sulaiman Hasan and etal / Mosul University.
Recommended books and references (scientific journals, reports…)	Engineering Hydrology 1992 / Mohamad Sulaiman Hasan and etal / Mosul University.
Electronic References, Websites	Researches and Studies printed from Internet

Course Description Form

1. Course Name:

Drainage

2. Course Code:

ASW310

3. Semester / Year:

Semester/1 2023_2024

4. Description Preparation Date:

2024/1/25

5. Available Attendance Forms:

Attendance (theoretical + practical)

6. Number of Credit Hours (Total) / Number of Units (Total)

60 hours / 3 units

7. Course administrator's name (mention all, if more than one name)

Prof. Dr. Shuker Mahmood Hasan
smhasan@uoanbar.edu.iq

8. Course Objectives

1. Teaching UG students the basics of drainage.
2. Teaching UG students the problems of drainage.
3. Teaching UG students the design and construction of drainage networks.
4. Teaching UG students the concepts of floods and methods of controlling them.

9. Teaching and Learning Strategies

Strategy
1. Traditional means of explanation and clarification.
2. Electronic means of explanation and clarification.
3. Field work.
4. Adopting student groups for field work to take measurements.
5. Show illustrative pictures of the devices and their accessories.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
One	5	Drainage under standable, purpose drainage, advantages of drainage drainage in Iraq	Drainage	**A lecture with explanation a clarification**	**The exam**
Two	5	Physical soil properties and its rela with drainage	Drainage	**A lecture with explanation and clarification**	**The exam**

Three	5	Water flow in soils, pioseuilles la	Drainage	**A lecture with explanation a clarification**	**The exam**
Four	First month exam - theoretical and practical				
Five		Evaporation, transpiration, infiltrati	Drainage	**A lecture with explanation and clarification**	**The exam**
Six	5	Stream flow measurement	Drainage	**A lecture with explanation a clarification**	**The exam**
Seven	5	Water timer curves	Drainage	**A lecture with explanation and clarification**	**The exam**
Eight	Second month exam - theoretical and practical				
Nine	5	Floods expectations	Drainage	**A lecture with explanation and clarification**	**The exam**
Ten		Sub surface water and its resources			
Eleven	5	Soil Water and its vertical distribution	Drainage	**A lecture with explanation and clarification**	**The exam**
Twelve	5	Ground water movement	Drainage	**A lecture with explanation and clarification**	**The exam**
Thirteen	Third month exam - theoretical and practical				
Fourteen	General Review of the material				
Fifteen	**Field Visit to drainage project in college**				

11. Course Evaluation

1- Daily exams.
2- Monthly tests.
3- Preparing and delivering seminars.
4- Daily posts.
5- preparing the special problem.

12. Learning and Teaching Resources

Required textbooks (curricular books any)	Investigation, design, implementation and maintenance / Dr. Mohsin M. Allami and Dr. Alaa S. Aljanabi
Main references (sources)	Investigation, design, implementation and maintenance / Dr. Mohsin M. Allami and Dr. Alaa S. Aljanabi
Recommended books and references (scientific journals, reports…)	Irrigation and Drainage / Laith I. Khalil
Electronic References, Websites	Researches and Studies printed from Internet

Course Description Form

1. Course Name:
Organic matter
2. Course Code:
ASW301
3. Semester / Year:
Semester first/2023-2024
4. Description Preparation Date:
25-1-2024
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3 units
7. Course administrator's name (mention all, if more than one name)
Haneen Shartoh Sharqi Email: ag.haneen.shartoh@uoanbar.edu.iq
8. Course Objectives
Studying the sources of organic matter in the soil, transformations, and their impact on the soil and plants
9. Teaching and Learning Strategies

Strategy	**It highlights the importance of organic matter and organic fertilizers and their effect on soil characteristics and considers them a good alternative to chemical fertilizers for a clean environment..**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	The history and introduction of organic matter and some of its important definitions	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
the second		Sources of organic matter in soil	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
the third		Components of plant waste	**Organic matter**	**A lecture with explanation and clarification**	**The exam**

the fourth		Monthly exam	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
Fifth		Decomposition of organic compounds and formation of	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Carbon cycle in nature	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
VIII		Organic compounds containi nitrogen and their mineralizat	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
Ninth		Organic compounds containing phosphorus and their mineralization	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
The tenth		Sulfur-containing organic compounds and their mineralization	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
eleventh		The effect of climate and plants on the soil organic matter content	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
twelveth		Some characteristics of organic soil HISTOSOL, the effects of organic matter on soil characteristics and the relationship between them	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		The C:N ratio, its importance and value in some plants and organisms, the amount of organic matter and nitrogen in the soil	**Organic matter**	**A lecture with explanation and clarification**	**The exam**
Fifteenth		Organic Agriculture	**Organic matter**	**A lecture with explanation and clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.

3- Practical tests. 4- Research and reports.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1-Al-Naimi, Saadallah. 1999 Fertilizers and soil fertility. Ministry of Higher Education and Scientific Research, University of Mosul. -2 Awad, Kazem Mashhout 1987 Fertilization and Soil Fertility, Ministry of Higher Education and Scientific Research, University of Basra. 3 - Havlin, J.L., Tisdale, S.L., Nelson, W.L., and Beaton, J.D. 2005, Soil Fertility and Fertilizers, 5th edition. USA .
Main references (sources)	1-Awad, Kazem Mashhout 1987 Fertilization and Soil Fertility, Ministry of Higher Education and Scientific Research, University of Basra. 2 - Page, A.L. et. Al. 1982, Methods of soil analyisi, part 2 2nd Chemical and microbiological properties. Madison
Recommended books and references (scientific journals, reports…)	1- Al-Ani, Abdullah Najm, 1980, Principles of Soil Science, Ministry Higher education and scientific research. 2- White, R.E, 1979, Introduction to the principles and practices of soil science. BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of soil analyisi, part 2 2nd Chemical and microbiological properties. Madison, Wisconsin, USA
Electronic References, Websites	Local, regional and international scientific books and journals concerned with soil organic matter, especially within scientific and virtual libraries.

Course Description Form

1. Course Name:
Human rights and public democracy
2. Course Code:
DEHR105
3. Semester / Year:
SEMESTER 2023_2024
4. Description Preparation Date:
25/1/2024
5. Available Attendance Forms:
Presence
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours 2 units per week
7. Course administrator's name (mention all, if more than one name)
Name: abd al salam khalaf Email: abd.khalaf@uoanbar.edu.iq
8. Course Objectives

1- Preparing students who believe in human rights and democracy 2- Instilling national values in the individual and society and combating forms of corrupti	3- Helping in writing scientific research objectively 4- Knowledge of the general rights and freedoms of the individual and society 1- Practical application of public rights and freedom

9. Teaching and Learning Strategies	
Strateg	1- Enabling students to obtain the intellectual framework A believer in the strategy of human rights and public freedoms 2- Preparing a generation that is conscious and aware of the importance of rights and freedoms 3- Instilling the principles of patriotism and preserving it 4- Developing a culture of human rights and democracy among the individual and society 1- Developing students' cognitive awareness of the importance of human rights And democracy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Understanding and learning skills development Correct spelling Know the errors Knowledge and awareness Learn to parse Learn to parse Knowledge and perception Learn Arabic Proper pronunciation Learn the differences Brief and learn Discrimination Understanding and perception The right style	Definition of human rig A historical overview of human rights Human rights in heaven religions The most important pul rights and freedoms Human rights violations society Supporting internationa provisions and conventions For human rights Applications in the gene rights of the individual Administrative corrupti and ways to combat it Concepts of instilling national values in socie Democracy (definition - concept) Democracy (historical stages) Difficulties in implementing democra in society Distinguishing between rights and democracy Characteristics of a democratic system Advantages and disadvantages of democracy Democracy applications The election Democratic Constitutio	My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence My presence	the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam the exam

11. Course Evaluation

1- Through daily and monthly exams, homework, oral exams, attendance, and class activities.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Human rights, children and democracy
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Soil Minerals

2. Course Code:

ASW311

3. Semester / Year: **Second semester - 2024**

4. Description Preparation Date:

2024–1–25

5. Available Attendance Forms:

Weekly

6. Number of Credit Hours (65) Number of Units (3)

7. Course administrator's name (Dr.Ahmed Riyadh Abdulateef)

8. Course Objectives

Course Objectives	A. The student should understand the importance of soil clay minerals and the types of clay in which chemical phenomena occur. B. The student should distinguish between Clay colloids in the soil in which chemical processes take place. C. The student should know the main characteristics of clay minerals i different soils. D. How to work on the analysis of clay minerals and by methods adop in international laboratories.

9. Teaching and Learning Strategies

Strategy	The ability to use certain devices and equipment for metallographic analysis. The ability to diagnose different clay minerals depending on different analysis methods. The ability to apply the results of chemical analysis in understanding their mineral components.. The ability to distinguish chemical properties from the knowledge of the types of clay minerals contained in them. The ability to measure the types of clay minerals through the use of metallurgical and chemical methods of analysis.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	**The importance of cl minerals**	Soil Minerals	Lecture explanatio	Daily and quarterly exams and activity
2	5	**The Earth's crust, the mineral part in the s**	Soil Minerals	Lecture explanatio	Daily and quarterly exams and activity

3	5	**Chemical composition the magma**	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
4	5	**Silicate minerals**	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
5	5	**Structural composition clay minerals**	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
6	5	Clay minerals Group 1:	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
7	5	First month exam – theory & practical	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
8	5	Clay minerals Group 2: smectite	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
9	5	Alite group	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
10	5	Vermiculite group	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
11	5	The chlorite group	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
12	5	**Gypsum Land Reclamation**	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
13	5	Clay minerals in Iraqi so	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
14	5	Methods for measuring clay minerals	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity
15	5	2nd month exam – theo & practical	Soil Minerals	Lecture explanation	Daily and quarterly exams and activity

11. Course Evaluation	
Daily exam 5, reporting5, quarterly exam 40, Final Exam 50 (total score 100)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Kazim mashhout principles of soil chemistry University of Mosul Salman Khalaf soil minerals University of Baghdad 2023
Main references (sources)	References related to soil minerals
Recommended books and references (scientific journals, reports…)	Books or references related to soil minerals
Electronic References, Websites	

Course Description Form

1. Course Name:
Organic chemistry
1. Course Code:
ORCH225
2. Semester / Year
first semester 2023_2024
3. Description Preparation Date:
2024-1-25
4. Available Attendance Forms: Attendance live
5. Number of Credit Hours (75) / Number of Units (3.5)
6. Course administrator's name (Dr. Maher Ahmed Abed)
Name: Dr. Maher Ahmed Abed Email:
7. Course Objectives

Course Objectives	Explanation of cyclic and open aphatic compounds Classification of active compounds according to active group Preparation of some organic compounds Naming organic compounds

8. Teaching and Learning Strategies

Strategy	

9. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	Organic chemistry	Preparation of cyclic acid - its purpose - scientific idea - method of work - calculations - drawing of the device	lectures Theo. And EXP.	Daily and quart exam
2	2+3	Organic chemistry	Preparation of alkyl halide - purpose of the experiment - scientific idea - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam

3	2+3	Organic chemistry	Alcohols - purpose of the experiment - scientific idea - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
4	2+3	Organic chemistry	Acetone - purpose of the experiment - scientific idea - method of work - calculations - drawing of the device. First month exam	lectures Theo. And EXP.	Daily and quart exam
5	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
6	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
7	2+3	Organic chemistry	First month exam	lectures Theo. And EXP.	Daily and quart exam
8	2+3	Organic chemistry	Study of the properties of aldehydes and ketones - introduction - method of work - calculations - drawing of the device	lectures Theo. And EXP.	Daily and quart exam
9	2+3	Organic chemistry	Preparation of caroxylic acid - purpose of the experiment - type of reaction - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
10	2+3	Organic chemistry	Preparing esters - purpose of the experiment - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
11	2+3	Organic chemistry	Preparing aspirin - purpose of the experiment - method of work - calculations - drawing of the device.	lectures Theo. And EXP.	Daily and quart exam
12	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
13	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam
14	2+3	Organic chemistry	Second month exam	lectures Theo. And EXP.	Daily and quart exam
15	2+3	Organic chemistry	review	lectures Theo. And EXP.	Daily and quart exam

10. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Organic chemistry for agriculture college stude
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Types of Chemical Bonds. Dummies. Retrieved January 4, 2021,from
Electronic References, Websites	-

Course Description Form

1. Course Name:

Experiment Design

2. Course Code:

ASW306

3. Semester / Year:

Course Autumn / 2023-2024

4. Description Preparation Date:

25/1/2024

5. Available Attendance Forms:

Direct

6. Number of Credit Hours (Total) / Number of Units (Total)

75 / 5

7. Course administrator's name (mention all, if more than one name)

Name: Prof. Dr. Zeyad Abdul-Jabar Abdul-Hamed
Email: ag.zeyad.abdul-hamed@uoanbar.edu.iq

Course Objectives :

8.

The student learns about the scientific foundations for designing analyzing theoretical and practical experiments	Learn about modern technologies relevant to designing experiments

9. Teaching and Learning Strategies

Strategy	**A** - Expanding the student's theoretical and practical understandings **B**- Access to recent and critical experiments related to experimental design C-Learn about methods for designing experiments, processes, and conditions surrounding the research or experiment

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	(30 hours theoretical + 45 practical) (75 hours 5 hours (2 + 3)	Look and work Explanation and interpretation with Use means Electronic clarification	Introduction to the histo of statistics, the first researchers in designing experiments, studying statistical tests	theoretical practical	Theoretical and practical tests
2	5	Look and work Explanation and interpretation with Use means Electronic clarification	An introduction to the history of statistics, the first researchers in statistics and experimental design,	heoretical and practical	Theoretical and practical tests

3	5	Look and work Explanation and interpretation with Use means Electronic clarification	The importance designing experiments the researcher	theoretical and practical	Theoretical and practical tests
4	5	Look and work Explanation and interpretation with Use means Electronic clarification	Sources of difference in design of experiments	theoretical and practical	Theoretical and practical tests
5	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely random CRD isometric design	theoretical and practical	Theoretical and practical tests
6	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve iso-repeated wh randomized CRD exerci	theoretical and practical	Theoretical and practical tests
7	5	Look and work Explanation and interpretation with Use means Electronic clarification	Completely randomized C design with uneq replicates.	theoretical and practical	Theoretical and practical tests
8	5	Look and work Explanation and interpretation with Use means Electronic clarification	Solve the exercises c complete randomized C isometric replica design.	theoretical and practical	Theoretical and practical tests
9	5	Look and work Explanation and interpretation with Use means Electronic clarification	Randomized comp block design (RCBD)	theoretical and practical	Theoretical and practical tests
10	5	Look and work Explanation and interpretation with Use means Electronic clarification	RCBD Random Complete Block De Exercises	theoretical and practical	Theoretical and practical tests
11	5	Look and work Explanation and interpretation with Use means Electronic clarification	Missed View Rating	theoretical and practical	Theoretical and practical tests

12	5	Look and work Explanation and interpretation with Use means Electronic clarification	latin square design	theoretical and practical	Theoretical and practical tests
13	5	Look and work Explanation and interpretation with Use means Electronic clarification	split experiences	theoretical and practical	Theoretical and practical tests
14	5	Look and work Explanation and interpretation with Use means Electronic clarification	Split plot experiments exercises	theoretical and practical	Theoretical and practical tests
15	5	Look and work Explanation and interpretation with Use means Electronic clarification	Orthogonal comparisons experiments and trend analysis	theoretical and practical	Theoretical and practical tests

11. Course Evaluation

1-Weekly tests (quiz) and semester and final exams (theoretical and practical).
2- Interaction within the lecture.
3- Attendance.
4- Commitment and discipline within the classroom and laboratory.
5- Preparing scientific reports, providing scientific explanations and presenting them
6-Expanding the student's theoretical and practical understandings
7- Learn about modern techniques relevant to Design of experiments

8- Identify the surrounding factors related to the science of Design of experiments
9-Learn about Design of experiments and field planning operations.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of Statistical methods book for agricultural research
Main references (sources)	Book of Agricultural experiment design and analysis book
Recommended books and references (scientific journals, reports…)	Book of applications in the design and analysis of experiments
Electronic References, Websites	hpp// Principles of experimental design. com.

Course Description Form

1. Course Name:
General Physics
2. Course Code:
ASW111
3. Semester / Year:
First Semester/2023-2024
4. Description Preparation Date:
25/1/2024
5. Available Attendance Forms:
in-person learning
6. Number of Credit Hours (Total) / Number of Units (Total)
75/3
7. Course administrator's name (mention all, if more than one name)
Name: Dr.Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq
8. Course Objectives

Course Objectives	The ability to understand the theories and phys laws, and using it in different applications, ' ability to understand the physical principles, working with them according to the theories laws, The students must know the relation v these physical laws, and are using them practica The ability the analysis the problems which h faced him, and solve it..

9. Teaching and Learning Strategies	
Strategy	A1. Analysis the problems and understand how can you be ability to solve it. A2. Testing these physical laws in the practical experimental. A3. Using physical equations to find variables in the problems. A4. Ability of student to evaluate the problems, and writing the scientific reports. A5. The student can acquire the practical and scientific experience in his specialized f it.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	General properties for matter	General Introduction	Theoretical Lectures,white board	questions , discussions, and examples
Second	2	Physical quantities and their units	Finding gravity acceleration by using simple pendulum	on the white bo	questions , discussions, and examples

Third	2	Temperature measurements	Finding force constant for spiral spring	on the white board, Homewo	questions , discussions, and examples
Fourth	2	Dimensions , velocities and molecular forces	Finding Young's modulus when the mass is constant	on the white bo	questions , discussions, and examples
Fifth	2	Exam of first month			
Sixth	2	Mechanical properties for constant fluid	Review	on the white bo	questions , discussions, and examples
Seventh	2	Elastic coefficients	Finding unknown resistance by using resistance box	on the white bo	questions , discussions, and examples
Eighth	2	Surface tension and capillary properties	Ohms' law investigation	on the white bo	questions , discussions, and examples
Ninth	2	Finding Young's modulus when the length is constant	Mechanical properties for flow fluid	on the white bo	questions , discussions, and examples
Tenth	2	Exam of second month			
Eleventh	2	Viscosity	Review	on the white bo	questions , discussions, and examples
Twelfth	2	Methods of finding viscosities	Finding liquid density using test tube	on the white bo	questions , discussions, and examples
Thirteenth	2	Osmotic phenomenon	Effect the temperature on the viscosity of liquid	on the wl board, Homewo	questions , discussions, and examples
Fourteenth	2	Finding viscosity coefficient for liquid using falling sphere through viscosity liquid	capillary properties and their applications	on the wl board, Homewo and Applicati by computers	questions , discussions, and examples
		Exam of the third month			

11. Course Evaluation

Theory exam 30%, Practical Quiz 10%, Practical exam 10%, final exam 50%. Final degree from 100%.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Text book: "The agricultural physics", Dr. Amjad A Alrazaq, Dr. Shaker Jaber, Iraq, 1988.
Main references (sources)	Text book: "The agricultural physics", Dr. Amjad A Alrazaq, Dr. Shaker Jaber, Iraq, 1988.
Recommended books and references (scientific journals, reports…)	"Principles of physics", F.G.Boch, R.A.Gerd, translate Dr. Saeed Aljuzari, Pro.Dr. Mohamed Ameen, Egypt, 19
Electronic References, Websites	questions and problems from other sites

Course Description Form

1. Course Name:
Soil morphology
2. Course Code:
ASW309
3. Semester / Year: Year: **Second Semester/2024**
4. Description Preparation Date:
25 / 1 / 2024
5. Available Attendance Forms:
Weekly
6. Number of Credit Hours / Number of Units
45 / 3
7. Course administrator's name (mention all, if more than one name): Prof Dr.Salah Murshid Farhan
8. Course Objectives

Course Objectives	Knowledge of soil properties, pedological information, and standard morphological description
9. Teaching and Learning Strategies	
Strategy	theoretical explanation with practical field application

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	Giving a basic id about morphological phenomena	Definition of morpholo and its relationships	Scientific theoretical explanation	Group participation
2	5	Giving a basic idea about morphological phenomena	Vocabulary for morphological description	Scientific theoretical explanation	Group participation
3	5	Giving a basic idea about morphological phenomena	Conditions for eligibili for morphological performance	Scientific theoretical explanation	Group participation
4	5	Giving a basic idea about morphological phenomena	Morphological characterization technology	Scientific theoretical explanation	Group participation
5	5	Geological processes	Weathering and erosio	Scientific theoretical explanation	Homework
6	5	Pedogenic processes	Soil formation factors	Scientific theoretical explanation	Homework
7	5	Pedogenic	Soil formation process	Scientific	Seminars

		processes		theoretical explanation	
8	5	Identifying soi diagnostic horizo	Main and secondary horizons	Scientific theoretical explanation	Seminars
9	5	Identifying soi diagnostic horizo	surface diagnostic horizo	Scientific theoretical explanation	Seminars
10	5	Identifying soi diagnostic horizo	Subsurface diagnostic horizons	Scientific theoretical explanation	Homework
11	5	Sampling metho	Soil samples and collections	Scientific theoretical explanation	Field work
12	5	Giving a basic id about morphologica phenomena	Morphological properti	Scientific theoretical explanation	Homework
13	5	Learn about the standard description method	Soil color and soil structure	Scientific theoretical explanation	Field work
14	5	Learn about the standard description method	Soil texture and consistency	Scientific theoretical explanation	Field work
15	5	Learn about the standard description method	The rest of the morphological characte	Scientific theoretical explanation	Field work

11. Course Evaluation
Daily exam 5, submission of reports 5, semester exam 40, final exam 50 (total score 100)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if ar	
Main references (sources)	Al-Aqidi, Walid Khaled, and Shaker Mahmoud Al-Issawi. 1989. Soil morphology. University of Baghd
Recommended books and references (scientific journals, reports...)	Al-Aqidi, Walid Khaled, and Shaker Mahmoud Al-Issawi. 1989. Soil morphology. University of Baghdad
Electronic References, Websites	Soil survey staff(1993).soil survy manual, USI

Course Description Form

13. Course Name:
Soil Environment and Meteorological
14. Course Code:
ASW204
15. Semester / Year:
Second / 2023_2024
16. Description Preparation Date:
25 / 1 / 2024
17. Available Attendance Forms:
In-person
18. Number of Credit Hours (Total) / Number of Units (Total)
28 / 2
19. Course administrator's name (mention all, if more than one name)
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq
20. Course Objectives

Course Objectives	**Understanding environmental factors, including surrounding climatic conditi and their relationship with organisms and plants, in a sequential scientific mar in order to convey the basic idea and increase students' understanding of th foundations and the practical scientific applications of environmental monito devices.**

21. Teaching and Learning Strategies	
Strategy	

Week	Hours	Learning Outcomes	Unit / Topic	Teaching Method	Assessment Method
Week 1	2	Introduction to the Importance of Environmental Science and Weather	Environmental Science and Weather	In-person / Classroom	-
Week 2	2	Definition of Environmental Science, its Branches, Climate, and Weather	-	-	-
Week 3	2	Ecosystem and its Components	-	-	-
Week 4	2	Atmosphere and its Layers	-	-	-
Week 5		First Monthly Exam			
Week 6	2	Energy, Radiation, and Light	-	-	-
Week 7	2	Impact of Light on Plants	-	-	-
Week 8	2	Temperature	-	-	-
Week 9	2	Temperature Distribution System	-	-	-
Week 10		Second Monthly Exam			
Week 11	2	Atmospheric Pressure and its Distribution, Major Zones	-	-	-
Week 12	2	Winds and their Divisions, Impact on	-	-	-

		Plants			
Week 13	2	Rainfall, Distribution, Effects on Plants	-	-	-
Week 14	2	Measurement Devices for Climate Elements, Climate Stations	-	-	-
Week 15		Third Monthly Exam			
Week 16		Review			

15. Course Evaluation	
16. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Soil environment and weather conditions Dr. Hik Mustafa, University of Baghdad 2- Foundations and environment of crops Muhammad Nazir, University of Baghdad 3- Agricultural Physics and Meteorology Prof. Dr. A Al-Nasr Hashem Abdel Hamid Prof. Dr. Ismat Has Attia Nofal
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Yes

Course Description Form

22. Course Name:
English language 1
23. Course Code:
ASW106
24. Semester / Year:
Second / 2023
25. Description Preparation Date:
25-1-2024
26.Available Attendance Forms:
In class
27.Number of Credit Hours (Total) / Number of Units (Total)
14 / 1
28. Course administrator's name (mention all, if more than one name)
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq
29. Course Objectives

Course Objectives	Students communicate with the English language and develop their linguistic proficiency in agricultural grammar and terminology Introducing students to correct reading and writing in English Introducing students to the correct pronunciation of English words

30. Teaching and Learning Strategies	
Strategy	

31. Course schedule

Week	Hours	Learning Outcomes	Unit / Topic	Teaching Method	Assessment Method
Week 1	1	Hello	English	In-person / Classroom	-
Week 2	1	Your world	-	-	-
Week 3	1	Personal information	-	-	-
Week 4	1	Family and friends	-	-	-
Week 5	1	**First Monthly Exam**			
Week 6	1	It's my life	-	-	-
Week 7	1	Every day	-	-	-
Week 8	1	Places I like	-	-	-
Week 9	1	Where I live	-	-	-
Week 10	1	**Second Monthly Exam**			
Week 11	1	Happy birthday, we have a good time	-	-	-
Week 12	1	We can do it	-	-	-
Week 13	1	Here and now, It's time to go	-	-	-
Week 14	1	Terms in soil sciences	-	-	-
Week 15	1	**Third Monthly Exam**			
Week 16	1	**Review**			

17.Course Evaluation	
18.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	headway
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Oxford website

Course Description Form

32. Course Name:
English language 2
33. Course Code:
ASW116
34. Semester / Year:
Second / 2023_2024
35. Description Preparation Date:
25-1-2024
36. Available Attendance Forms:
In class
37. Number of Credit Hours (Total) / Number of Units (Total)
14 / 1
38. Course administrator's name (mention all, if more than one name)
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq
39. Course Objectives

Course Objectives	Students communicate with the English language and develop their linguistic proficiency in agricultural grammar and terminology Introducing students to correct reading and writing in English Introducing students to the correct pronunciation of English words

40. Teaching and Learning Strategies

Strategy	

41. Course schedule

Week	Hours	Learning Outcomes	Unit / Topic	Teaching Method	Assessment Method
Week 1	1	Introduction	English	In-person / Classroom	-
Week 2	1	Past participle	-	-	-
Week 3	1	Present participle	-	-	-
Week 4	1	Future	-	-	-
Week 5	1	**First Monthly Exam**			
Week 6	1	Past continues	-	-	-
Week 7	1	Present continues	-	-	-
Week 8	1	Passage	-	-	-
Week 9	1	Letters	-	-	-
Week 10	1	**Second Monthly Exam**			

Week 11	1	If	-	-	-
Week 12	1	Wh. Questions	-	-	-
Week 13	1	Adjectives	-	-	-
Week 14	1	Speaking skills	-	-	-
Week 15	1	**Third Monthly Exam**			
Week 16	1	**Review**			

19.Course Evaluation	
20.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	headway
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Exford website

Course Description Form

42. Course Name:	
Leveling	
43. Course Code:	
ASW211	
44. Semester / Year:	
Second / 2023_2024	
45. Description Preparation Date:	
25-1-2024	
46.Available Attendance Forms:	
In class	
47.Number of Credit Hours (Total) / Number of Units (Total)	
14 / 1	
48. Course administrator's name (mention all, if more than one name)	
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq	
49. Course Objectives	
Course Objectives	Students communicate with the English language and develop their linguistic proficiency in agricultural grammar and terminology Introducing students to correct reading and writing in English Introducing students to the correct pronunciation of English words
50. Teaching and Learning Strategies	
Strategy	

11. Course Structure

Weak	hour	Required learning	Unit name	Teaching method	assessment method
First	5	Introductory introduction and the purpose of the study of land leveling, definition of tools	Leveling	Recitation, work and field practice	Tests and reports
Second	5	Why the leveling and adjustment process	Leveling	Recitation, work and field practice	Tests and reports
Third	5	Leveling and grading agricultural land. Prepare leveling tables	Leveling	Recitation, work and field practice	Tests and reports
Fourth	5	Preparation of longitudinal and transverse sections	Leveling	Recitation, work and field practice	Tests and reports

Fifth	5	Preparing contour maps, using leveling devices	Leveling	Recitation, work and field practice	Tests and reports
Sixth	5	First monthly exam	Leveling	Recitation, work and field practice	Tests and reports
Seventh	5	land reclamation method Field work and preparation of a leveling map	Leveling	Recitation, work and field practice	Tests and reports
Eighth	5	One-way leveling field practice	Leveling	Recitation, work and field practice	Tests and reports
Ninth	5	Two-way leveling Field work and reading	Leveling	Recitation, work and field practice	Tests and reports
Tenth	5	The mechanisms used in the leveling and their specifications	Leveling	Recitation, work and field practice	Tests and reports
Eleventh	5	Prepare a time schedule	Leveling	Recitation, work and field practice	Tests and reports
Twelfth	5	The second monthly exam	Leveling	Recitation, work and field practice	Tests and reports
Thirteenth	5	Cost Accounts	Leveling	Recitation, work and field practice	Tests and reports
fourteenth	5	Feasibility Solving exercises	Leveling	Recitation, work and field practice	Tests and reports
Fifteenth	5	Field work test and equipment use	Leveling	Recitation, work and field practice	Tests and reports

21. Course Evaluation	
22. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Land leveling and modification/ 2- Soil leveling / Land Reclamation Institution 3- Printed lectures
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Exford website

Course Description Form

1. Course Name:
General Physics
2. Course Code:
3. Semester / Year:
First Semester/2023-2024
4. Description Preparation Date:
25/1/2024
5. Available Attendance Forms:
in-person learning
6. Number of Credit Hours (Total) / Number of Units (Total)
75/3
7. Course administrator's name (mention all, if more than one name)
Name: Dr.Bilal Yaseen Taher Email: ag.bilal.yaseen@Uoanbar.edu.iq
8. Course Objectives

Course Objectives	The ability to understand the theories and phys laws, and using it in different applications, ability to understand the physical principles, working with them according to the theories laws, The students must know the relation v these physical laws, and are using them practica The ability the analysis the problems which h faced him, and solve it..

9. Teaching and Learning Strategies

Strategy	A1. Analysis the problems and understand how can you be ability to solve it. A2. Testing these physical laws in the practical experimental. A3. Using physical equations to find variables in the problems. A4. Ability of student to evaluate the problems, and writing the scientific reports. A5. The student can acquire the practical and scientific experience in his specialized f it.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	General properties for matter	General Introduction	Theoretical Lectures,white board	questions , discussions, and examples
Second	2	Physical quantities and their units	Finding gravity acceleration by using simple pendulum	on the white bo	questions , discussions,

					and examples
Third	2	Temperature measurements	Finding force constant for spiral spring	on the white board, Homewo	questions , discussions, and examples
Fourth	2	Dimensions , velocities and molecular forces	Finding Young's modulus when the mass is constant	on the white bo	questions , discussions, and examples
Fifth	2	Exam of first month			
Sixth	2	Mechanical properties for constant fluid	Review	on the white bo	questions , discussions, and examples
Seventh	2	Elastic coefficients	Finding unknown resistance by using resistance box	on the white bo	questions , discussions, and examples
Eighth	2	Surface tension and capillary properties	Ohms' law investigation	on the white bo	questions , discussions, and examples
Ninth	2	Finding Young's modulus when the length is constant	Mechanical properties for flow fluid	on the white bo	questions , discussions, and examples
Tenth	2	Exam of second month			
Eleventh	2	Viscosity	Review	on the white bo	questions , discussions, and examples
Twelfth	2	Methods of finding viscosities	Finding liquid density using test tube	on the white bo	questions , discussions, and examples
Thirteenth	2	Osmotic phenomenon	Effect the temperature on the viscosity of liquid	on the wl board, Homewo	questions , discussions, and examples
Fourteenth	2	Finding viscosity coefficient for liquid using falling sphere through viscosity liquid	capillary properties and their applications	on the wl board, Homewo and Applicati by computers	questions , discussions, and examples
		Exam of the third month			

11. Course Evaluation

Theory exam 30%, Practical Quiz 10%, Practical exam 10%, final exam 50%. Final degree from 100%.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Text book: "The agricultural physics", Dr. Amjad Alrazaq, Dr. Shaker Jaber, Iraq, 1988.
Main references (sources)	Text book: "The agricultural physics", Dr. Amjad Alrazaq, Dr. Shaker Jaber, Iraq, 1988.
Recommended books and references (scientific journals, reports…)	"Principles of physics", F.G.Boch, R.A.Gerd, translate Dr. Saeed Aljuzari, Pro.Dr. Mohamed Ameen, Egypt, 19
Electronic References, Websites	questions and problems from other sites

Course Description Form

1. Course Name:
Soil Salinity
2. Course Code:
ASW308
3. Semester / Year:
Second / 2023_2024
4. Description Preparation Date:
25 / 1 / 2024
5. Available Attendance Forms:
Attendance (theoretical + practical)
6. Number of Credit Hours (Total) / Number of Units (Total)
65 hours / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Kamal Hamed Ohmaid Email: kmhm81@uoanbar.edu.iq
8. Course Objectives

1. Introducing students to the salts present in the soil, th impact on agricultural production, how to control them, and methods of coexistence with them. **2. Introducing students to the sources of salts, condition of their formation, conditions of their distribution, and methods of expressing them** **3. Introducing students to the chemical and physi properties of salts**	**4. To understand how salts affect s properties and different crops, causes of low productivity, and h plants tolerate salinity.**

9. Teaching and Learning Strategies	
Strategy	**1. Traditional means of explanation and clarification.** **2. Electronic means of explanation and clarification.** **3. Field experiments.** **4. Field visits to agricultural fields.** **5. Adopting student groups to conduct separate field experiments.** **6. Use of various laboratory devices and equipment.** **7. Displaying illustrative pictures of the various manifestations of the symptoms element deficiency on plants.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
The first	5	Introduction to salinity.	Soil salinity	**A lecture w explanation a clarification**	**The exam**
the second		The problem of sali and its impact on	Soil salinity	**A lecture w explanation a clarification**	**The exam**

the third		Soil formation conditi affected by salts	Soil salinity	**A lecture w explanation a clarification**	**The exam**
the fourth		Water and salt balance the soil and relationship to salinity	Soil salinity	**A lecture w explanation a clarification**	**The exam**
Fifth		Chemical and phys properties of s accumulated in s affected soils	Soil salinity	**A lecture w explanation a clarification**	**The exam**
VI	First month exam - theoretical and practical				
Seventh		Stages of salinization soil	Soil salinity	**A lecture w explanation a clarification**	**The exam**
VIII		Classification and nam of soils affected by salts	Soil salinity	**A lecture w explanation a clarification**	**The exam**
Ninth		The effect of soil salir on plant growth Salt tolerance agricultural crops,	Soil salinity	**A lecture w explanation a clarification**	**The exam**
The tenth		Irrigation water quality	Soil salinity	**A lecture w explanation a clarification**	**The exam**
eleventh		Controlling soil salir and ways to live with it	Soil salinity	**A lecture w explanation a clarification**	**The exam**
twelveth		Reclamation of saline so	Soil salinity	**A lecture w explanation a clarification**	**The exam**
Thirteenth	Second month exam - theoretical and practical				
fourteenth		Management of reclair soils	Soil salinity	**A lecture w explanation a clarification**	**The exam**
Fifteenth		Results of some saline la reclamation experime in Iraq	Soil salinity	**A lecture w explanation a clarification**	**The exam**

11. Course Evaluation

1- Rapid daily tests.
2- Theoretical tests.
3- Practical tests.
4- Research and reports.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Ahmed Haider Al-Zubaidi, Soil Salinity Book . Ministry of Higher Education and Scientifi Research, University of Baghdad. -2 Badr Jassim Awadi, Land Reclamat Book. Ministry of Higher Education Scientific Research, University of Baghdad.
Main references (sources)	1 - Page, A.L. et. Al. 1982, Methods of analyisi, part 2 2nd Chemical microbiological properties. Madison
Recommended books and references (scientific journals,	1 - Guide to chemical analyzes of soil, wate

reports…)	plants, and fertilizers, a systematic book. Written by: Prof. Dr. Shafiq Jalab Salem an Prof. Dr. Nour El-Din Shawqi Ali. Ministry Higher education and scientific resea Baghdad University. 2- White, R.E, 1979, Introduction to principles and practices of soil scie BlackWell scientific publication 3- Page, A.L. et. Al. 1982, Methods of analyisi, part 2 2nd Chemical microbiological properties. Madis Wisconsin, USA
Electronic References, Websites	Local, regional and international scient books and journals concerned with fertility, especially within scientific and vir libraries.

Course Description Form

1. Course Name:

l Microbiology

2. Course Code:

ASW203

3. Semester / Year:

Semester 2023_2024

4. Description Preparation Date:

25_1_2024

5. Available Attendance Forms:

Theoretical lectures, laboratories, field and field visits.

6. Number of Credit Hours (Total) / Number of Units (Total)

75 hours \ 15 units

7. Course administrator's name (mention all, if more than one name)

Name \ Prof. Dr. Ali Abaas Kadhim : Prof. Dr. Jamal Salih Alkobaisy
Email: ag.jamal.saleh@uoanbar.edu.iq \ ali.khadum@uoanbar.edu.iq

8. Course Objectives

Course Objectives	**Giving a historical overview, definition, and importance of studying microbiology.** **Definition of microbiology: characteristics of microorganisms, microscopy, bacteria, viruses, rickettsiae, metabolism in microorganisms, genetics of microorganisms, control of galactic organisms, the relationship of microorganisms to diseases, applied microbiology,** **- Introducing students to the types of microorganisms** **- The student knows how to name microorganisms.** **Study of the microscope, its parts, the magnification power of the microscope, and the relationships between living things**

9. Teaching and Learning Strategies

Strategy	1- Brainstorming 2- Thinking strategy according to the student's ability (for example) if the student can learn the concept of the existence of microorganisms and distinguish The beneficial from the harmful. 3- Critical thinking strategy in learning, which is a term that symbolizes the highest levels of thinking that aims to pose a problem. Then analyze it logically to reach the desired solution.

11. Course Structure

Week	Hours	ILOs	Unit/Module orTopic Title	TeachingMethod	Assessment Method

First	5	The student gets to know the importance of studying microbiology.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Second	5	The student learns about the sections of microbiology	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Third	5	The student gets to know the groups of neighborhoods microscopic soil	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Fourth	5	The student learns about the organic matter, the carbon cycle, and the enzymatic activity in the soil.	Soil Microbiology	Lecture, explanation and presentation of models	the exam
Fifth	5	The student learns about naming living things	Microbiology	Lecture, explanation and presentation of models	the exam
Sixth	5	Microscopic	Microbiology	Lecture, explanation and presentation of models	the exam
seventh	5	The student learns about the characteristics of microorganisms	Microbiology	Lecture, explanation and presentation of models	the exam
Eighth	5	The student learns about the microscope and its parts	Microbiology	Lecture, explanation and presentation of models	the exam
Ninth	5	The student learns about bacteria, their shapes, and their methods of reproduction	Microbiology	Lecture, explanation and presentation of models	the exam
Tenth	5	The student learns about bacteria, their shapes, and their methods of reproduction	Microbiology	Lecture, explanation and presentation of models	the exam
eleventh	5	The student learns about the anatomy of bacteria	Microbiology	Lecture, explanation and presentation of models	the exam
twelfth	5	The student learns about the development of bacteria and their methods of reproduction	l Microbiology	Lecture, explanation and presentation of models	the exam
Thirteenth	5	The student learns about the nutrition of living things microscopic, multiplying.	Microbiology	Lecture, explanation and presentation of models	the exam
fourteenth	5	The student learns ways to isolate Some microorganisms	Microbiology	Lecture, explanation and presentation of models	the exam

fifteenth	5	The student will identify ways to isolate other microorganisms	Microbiology	Lecture, explanation and presentation of models	the exam

10. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Ghiath Muhammad Qasim and Mudar Abdul Sattar Ali (1989). Soil microbiology. Directorate of Dar Al-Kutub for Printing and Publishing. 2- - Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley.
Main references (sources)	1- Foreign, Iraqi and Arab scientific journals 2- Mmicrobiology of soil, websites.
Recommended books and references (scientific journals, reports...)	- Martin Alexander, 1982, Introduction to Soil Microbiology, translated by John Wiley
Electronic References, Websites	Electronic lectures, scientific trips and field visits

Course Description Form

51. Course Name:
Soil management
52. Course Code:
ASW407
53. Semester / Year 2024_2023
54. Description Preparation Date:
25_1_2024
55.Available Attendance Forms: Weekly
My attendance
56.Number of Credit Hours (45) Number of Units (3)
45 hours for the first semester
57. Course administrator's name (dr.mais taha yaqub)
58. Course Objectives

Course Objectives	**Give an idea of the administrative processes that accompany crops, fr preparing the soil to harvesting the crop**
59. Teaching and Learning Strategies	
Strategy	- Brainstorming 2 - A thinking strategy according to the student's ability. For example, if the student is able to learn to make the color, texture, and construction measurements necessary to carry out administrative operations, and express them in the form of a map or graph, and know their importance in a detailed manner. 3- Explanation and clarification 5- Use scientific sources related to the course 6- Preparing reports by students

60. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5 hours	Introduction	Soil management	Deliverance - discussion	Daily testing
2	5 hours	Definition of soil management and its relationship with some concepts	Soil management	Deliverance - discussion	Daily testing
3	5 hours	Fertilisers	Soil management	Deliverance - discussion	Daily testing
4	5 hours	Calculate the amount of fertilizer	Soil management	Deliverance - discussion	Daily testing and reports

5	5 hours	Methods of adding fertilizers	Soil management	Deliverance - discussion	Monthly testing
6	5 hours	First month exam	Soil management	Deliverance - discussion	Daily testing and reports
7	5 hours	Crop systems	Soil management	Deliverance - discussion	Daily testing
8	5 hours	Agricultural cycle	Soil management	Deliverance - discussion	Daily testing
9	5 hours	Notes about fertilization and its side effects	Soil management	Deliverance - discussion	Daily testing
10	5 hours	Soil classification tasks in its management	Soil management	Deliverance - discussion	Daily testing and reports
11	5 hours	Land classification	Soil management	Deliverance - discussion	Monthly testing
12	5 hours	Land uses	Soil management	Deliverance - discussion	Daily testing and reports
13	5 hours	Administrative map	Soil management	Deliverance - discussion	Daily testing
14	5 hours	Second month exam	Soil management	Deliverance - discussion	Daily testing
15	5 hours				

61. Course Evaluation

Daily exam 5, submission of reports 5, semester exam 40, final exam 50 (total score 100)

62. Learning and Teaching Resources

Required textbooks (curricular books, if any	Soil management and land use, Dr. Walid Al-Akidi
Main references (sources)	Soil management and land use, Dr. Walid Al-Akidi
Recommended books and references (scientific journals, reports…)	- Land use planning. Dr.. Khudair Abbas
Electronic References, Websites	Foreign, Iraqi and Arab scientific journals

Course Description Form

63. Course Name:
Geology
64. Course Code:
ASW110
65. Semester / Year **2023_2024**
66. Description Preparation Date:
25_1_2024
67.Available Attendance Forms: Weekly
My attendance
68.Number of Credit Hours (45) Number of Units (3)
45 hours for the first semester
69. Course administrator's name (dr.mais taha yaqub)
70. Course Objectives

Course Objectives	**Studying a geological concept, studying the types of rocks and the fact affecting their formation**
71. Teaching and Learning Strategies	
Strategy	- Brainstorming 2 - Reflection strategy according to the student's ability. For example, if the student is able to distinguish between soil minerals. 3- Explanation and clarification 5- Use scientific sources related to the course 6- Preparing reports by students

72. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5 hours	Introduction and definition of geology	geology	Deliverance - discussion	Daily testing
2	5 hours	What is the earth made of?	geology	Deliverance - discussion	Daily testing
3	5 hours	Metals	geology	Deliverance - discussion	Daily testing
4	5 hours	Weathering	geology	Deliverance - discussion	Daily testing and reports
5	5 hours	The rock composition of the Earth's crust	geology	Deliverance - discussion	Monthly testing
6	5 hours	First month exam	geology	Deliverance - discussion	Daily testing and reports

7	5 hours	Igneous rocks	geology	Deliverance - discussion	Daily testing
8	5 hours	Sedimentary rocks	geology	Deliverance - discussion	Daily testing
9	5 hours	Metamorphic rocks	geology	Deliverance - discussion	Daily testing
10	5 hours	Rock cycle	geology	Deliverance - discussion	Daily testing and reports
11	5 hours	Second month exam	geology	Deliverance - discussion	Monthly testing
12	5 hours	Identifying rocks and their composition	geology	Deliverance - discussion	Daily testing and reports
13	5 hours	Rock shapes	geology	Deliverance - discussion	Daily testing
14	5 hours	Description of rocks	geology	Deliverance - discussion	Daily testing
15	5 hours				

73. Course Evaluation

Daily exam 5, submission of reports 5, semester exam 40, final exam 50 (total score 100)

74. Learning and Teaching Resources

Required textbooks (curricular books, if any	Principles of general geology, Dr. Muhammad Ahmed Saeed
Main references (sources)	Sawalha, Hakam Abdul-Jabbar Mustafa. 2110. 1- Geology
Recommended books and references (scientific journals, reports…)	Foreign, Iraqi and Arab scientific journals
Electronic References, Websites	Electronic references related to geology

Course Description Form

75. Course Name:
Soil survey and classification
76. Course Code:
ASW400
77. Semester / Year **2024_2023**
78. Description Preparation Date:
25_1_2024
79.Available Attendance Forms: Weekly
My attendance
80.Number of Credit Hours (45) Number of Units (3)
45 hours for the first semester
81. Course administrator's name (dr.mais taha yaqub)
82. Course Objectives

Course Objectives	**1- For the student to become familiar with surveying and its relations with other sciences.** **2- The student should describe the types of soil. 3- The student sho separate the types of soil according to the soil analysis. 4- That the stud knows the scientific methods used in the sampling process.** **5- The student should evaluate the types of soils, the basic methods achieving them, their importance, and the area of the areas to be surveye**

83. Teaching and Learning Strategies	
Strategy	1- Brainstorming 2 - A thinking strategy according to the student's ability. For example, if the student is able to learn to make the color, texture, and construction measurements necessary to conduct a survey, express them in the form of a map or graph, and know their significance in a detailed manner. 3- Explanation and clarification 5- Use scientific sources related to the course 6- Preparing reports by students

84. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5 hours	Introduction and definition	Soil survey and classification	Deliverance - discussion	Daily testing

		of soil surveying			
2	5 hours	Objectives of soil surveys and grades of soil surveys	Soil survey and classification	Deliverance - discussion	Daily testing
3	5 hours	Stages of implementing soil surveys	Soil survey and classification	Deliverance - discussion	Daily testing
4	5 hours	Soil maps and aerial photographs	Soil survey and classification	Deliverance - discussion	Daily testing and reports
5	5 hours	Soil classification systems	Soil survey and classification	Deliverance - discussion	Monthly testing
6	5 hours	Diagnose, name and identify taxonomic units	Soil survey and classification	Deliverance - discussion	Daily testing and reports
7	5 hours	Soil formation factors	Soil survey and classification	Deliverance - discussion	Daily testing
8	5 hours	Soil formation processes	Soil survey and classification	Deliverance - discussion	Daily testing
9	5 hours	Morphological characteristics related to soil surveying	Soil survey and classification	Deliverance - discussion	Daily testing
10	5 hours	Those conducting the survey	Soil survey and classification	Deliverance - discussion	Daily testing and reports
11	5 hours	Land classification	Soil survey and classification	Deliverance - discussion	Monthly testing
12	5 hours	Soil survey report	Soil survey and classification	Deliverance - discussion	Daily testing and reports
13	5 hours	First month exam	Soil survey and classification	Deliverance - discussion	Daily testing
14	5 hours	Second month exam	Soil survey and classification	Deliverance - discussion	Daily testing
15	5 hours				

85. Course Evaluation

Daily exam 5, submission of reports 5, semester exam 40, final exam 50 (total score 100)

86. Learning and Teaching Resources

Required textbooks (curricular books, if an	Soil survey and classification, Dr. Walid Al-Akidi
Main references (sources)	Soil morphology Dr. Walid Al-Akidi
Recommended books and references (scientific journals, reports…)	Foreign, Iraqi and Arab scientific journals
Electronic References, Websites	Electronic references related to soil surveying

Course Description Form

87. Course Name:
Remote sensing
88. Course Code:
ASW306
89. Semester / Year: (**2024_2023**)
90. Description Preparation Date:
25_1_2024
91.Available Attendance Forms: Weekly
My attendance
92.Number of Credit Hours (45) Number of Units (3)
45 hours for the first semester
93. Course administrator's name (dr.mohammed abdal-mnum hassan)
94. Course Objectives

Course Objectives	Introducing the student to Remote sensing, their importance to s and the types of these class soil, and their scientific and practi benefits.

95. Teaching and Learning Strategies

Strategy	1 The student gets to know the objectives of remote sensing. 2- The student should classify the types of soil according to the basis relied upon in the remote sensing process. 3- The student should separate between types of soils based on remote sensing. 4- That the student knows the scientific methods used in the remote sensing process. 5- The student should evaluate remote sensing, the basic methods for achieving it, its importance, and the area of the areas in which remote sensing is required to be carried out.

96. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5 hours	Introduction and definition of soil surveying	Remote sensing	A historical overview of remote sensing	Daily testing
2	5 hours	Soil development and formation	Remote sensing	The importance of remote sensing in agriculture	Daily testing

3	5 hours	Soil formation processes	Remote sensing	Energy interaction with the Earth's surface	Daily testing
4	5 hours	Soil survey and classification	Remote sensing	Spectral reflectance curve of a plant	Daily testing and reports
5	5 hours	Physical properties of soil	Remote sensing	First month exam	Monthly testing
6	5 hours	First month exam	Remote sensing	Spectral reflectance curve of water	Daily testing and reports
7	5 hours	Chemical properties of soil	Remote sensing	Sensing systems	Daily testing
8	5 hours	Textile types	Remote sensing	photographer	Daily testing
9	5 hours	Organic matter	Remote sensing	Aerial photos	Daily testing
10	5 hours	Soil extracts	Remote sensing	Information based on aerial photography	Daily testing and reports
11	5 hours	Negative effects of salt accumulation	Remote sensing	Stereo vision and stereo vision devices	Monthly testing
12	5 hours	Saturated soil paste	Remote sensing	Second month exam	Daily testing and reports

97. Course Evaluation

Daily exam 5, submission of reports 5, semester exam 40, final exam 50 (total score 100)

98. Learning and Teaching Resources

Required textbooks (curricular books, if any	1- Remote sensing by author Nihad Al-Jubouri
Main references (sources)	2- Foundations of remote sensing, Dr. Atef Motamed Abd
Recommended books and references (scientific journals, reports…)	Foreign, Iraqi and Arab scientific journals
Electronic References, Websites	Electronic references related to sensing

Course Description Form

1. Course Name:
English Language/4
2. Course Code:
ENGL406
3. Semester / Year:
SECOND / 2023-2024
4. Description Preparation Date:
25/1/2024
5. Available Attendance Forms:
in-person learning
6. Number of Credit Hours (Total) /
Number of Units (Total) 75 HOUER/2 UNIT
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer: Muhammed Rasheed Muhammed Email:ag.muhammed.rasheed@uoanbar.edu.iq
8. Course Objectives English Language/4

a. Daily and monthly tests through questions on the subject of the subject b. Grades on students' participation in research and scientific reports c. Discussing research and reports, presenting them, and giving them a grade d. Conducting tests during the application period and asking questions to students to determine the extent of their understanding of the subject	e. Conduct a discussion of reports at the end of the semester to find out students' choices in courses f. Writing reports after completing the application period to determine the extent t which students were able to diagnose problems and how to find solutions

9. Teaching and Learning Strategies
a. Developing teaching programs in coordination with higher department b. Develop teaching curricula similar to the work environment. c. Sending students to departments and directorates for the purpose of conducting summer application. d. Assigning students to conduct research and reports. e. Assigning students to go to the library and collect resources on the topi f. Implementing practical lessons in laboratories, each according to l specialty
10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation

		Outcomes		method	method
1	Theoreti 1 hour	English 4	No place like home	Theoretical 1 hour	Daily and quarterly exam activity
2	Theoreti 1 hour	English 4	Been there	Theoretical 1 hour	Daily and quarterly exam activity
3	Theoreti 1 hour	English 4	What a story	Theoretical 1 hour	Daily and quarterly exam activity
4	Theoreti 1 hour	English 4	No think but t truth	Theoretical 1 hour	Daily and quarterly exam activity
5	Theoreti 1 hour	English 4	Any eye to the future	Theoretical 1 hour	Daily and quarterly exam activity
6	Theoreti 1 hour	English 4	Making it big	Theoretical 1 hour	Daily and quarterly exam activity
7	Theoreti 1 hour	English 4	Getting on together	Theoretical 1 hour	Daily and quarterly exam activity
8	Theoreti 1 hour	English 4	Going to extremes	Theoretical 1 hour	Daily and quarterly exam activity
9	Theoreti 1 hour	English 4	Things aint what they use the be	Theoretical 1 hour	Daily and quarterly exam activity
10	Theoreti 1 hour	English 4	Risking life ar limb	Theoretical 1 hour	Daily and quarterly exam activity
11	Theoreti 1 hour	English 4	In your dream	Theoretical 1 hour	Daily and quarterly exam activity
12	Theoreti 1 hour	English 4	It's never to la	Theoretical 1 hour	Daily and quarterly exam activity

11. Course Evaluation

Daily (10%) and monthly tests (40%) through questions on the subject of the subject.
final exam(50%).

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	NEW HEADWAY plus
Main references (sources)	NEW HEADWAY plus
Recommended books and references (scientific journals, reports…)	NEW HEADWAY plus
Electronic References, Websites	You Tub Chanel

Course Description Form

1. Course Name:
English language 1
2. Course Code:
ASW106
3. Semester / Year:
First / 2023 – 2024
4. Description Preparation Date:
25-1-2024
5. Available Attendance Forms:
In class
6. Number of Credit Hours (Total) / Number of Units (Total)
14 / 1
7. Course administrator's name (mention all, if more than one name)
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq
8. Course Objectives

Course Objectives	Students communicate with the English language and develop their linguistic proficiency in agricultural grammar and terminology Introducing students to correct reading and writing in English Introducing students to the correct pronunciation of English words
9. Teaching and Learning Strategies	
Strategy	

10. Course schedule

Week	Hours	Learning Outcomes	Unit / Topic	Teaching Method	Assessment Method
Week 1	1	Hello	English1	In-person / Classroom	-
Week 2	1	Your world	-	-	-
Week 3	1	Personal information	-	-	-
Week 4	1	Family and friends	-	-	-
Week 5	1	**First Monthly Exam**			
Week 6	1	It's my life	-	-	-
Week 7	1	Every day	-	-	-
Week 8	1	Places I like	-	-	-
Week 9	1	Where I live	-	-	-
Week 10	1	**Second Monthly Exam**			
Week 11	1	Happy birthday, we have a good time	-	-	-
Week 12	1	We can do it	-	-	-
Week 13	1	Here and now, It's time to go	-	-	-
Week 14	1	Terms in soil sciences	-	-	-
Week 15	1	**Third Monthly Exam**			
Week 16	1	**Review**			

Course Description Form

99. Course Name:	
English language 2	
100. Course Code:	
ASW116	
101. Semester / Year:	
Second / 2023 – 2024	
102. Description Preparation Date:	
25-1-2024	
103. Available Attendance Forms:	
In class	
104. Number of Credit Hours (Total) / Number of Units (Total)	
14 / 1	
105. Course administrator's name (mention all, if more than one name)	
Mohammed Salim Jumaah E-mail: ag.mohammed.s.jumaah@uoanbar.edu.iq	
106. Course Objectives	
Course Objectives	Students communicate with the English language and develop their linguistic proficiency in agricultural grammar and terminology Introducing students to correct reading and writing in English Introducing students to the correct pronunciation of English words
107. Teaching and Learning Strategies	
Strategy	

108. Course schedule					
Week	**Hours**	**Learning Outcomes**	**Unit / Topic**	**Teaching Method**	**Assessment Method**
Week 1	1	introduction	English 2	In-person / Classroom	-
Week 2	1	Past participle	-	-	-
Week 3	1	Present participle	-	-	-
Week 4	1	Future	-	-	-
Week 5	1	**First Monthly Exam**			
Week 6	1	Past continues	-	-	-
Week 7	1	Present continues	-	-	-
Week 8	1	Passage	-	-	-
Week 9	1	letters	-	-	-
Week 10	1	**Second Monthly Exam**			
Week 11	1	If	-	-	-
Week 12	1	Wh. Questions	-	-	-
Week 13	1	Adjectives	-	-	-
Week 14	1	Speaking skills	-	-	-
Week 15	1	**Third Monthly Exam**			
Week 16	1	**Review**			

11.Course Evaluation	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Headway
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Oxford website